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[Continued from p. 217]

The ano-perineal region is bounded, anteriorly, by the root of the scrotum; posteriorly, by the extremity of the coccyx; and laterally, by the tuberosities of the ischium. It is of an oval figure, its largest extremity situated behind, and comprises all those parts which are included in the circle of the inferior strait of the pelvis.

Its constituent parts are the following:
1st. The skin; 2nd. The subcutaneous layer; 3rd. The aponeurosis; 4th. The muscles; 5th. The arteries; 6th. The veins; 7th. The lymphatics; 8th. The nerves; 9th. The urethra; 10th. The neck of the bladder; 11th. The rectum.

[The last three divisions being the most interesting of this region, will form the subject of the present translation. The urethra does not exclusively appertain to this region; but as Mr. Velpeau considered it more important to describe it as a whole in relation to catheterism, etc. instead of studying it in parts according to the different regions in which these parts are situated, he deemed it most proper to defer the description of it until he came to the perineal region.—Tr.]

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9th. The Urethra.

This canal is about nine and a half inches in length, and extends from the neck of the bladder to the extremity of the penis: according to Wathely and Ducamp, it never exceeds this measurement, but we, as well as Mr. Lisfranc, have found it attain to eleven inches and three quarters. It is the most important organ of the perinaeum, whether we consider it in relation to its functions in diseases, or the frequent operations it requires; and it has also been, for a century at least, the object of unceasing attention and of numerous investigations. J. L. Petit first noticed that when the penis is in a prolapsed state, the urethra presents a very distinct double curvature, and in consequence of this idea, he gave to his catheter the form of the letter S. The concavity of one of these curvatures looks upwards, and is met with under the symphysis of the pubis, that of the other is directed downwards, and is situated anterior to this articulation; the latter disappears during erection, or when the penis is raised towards the abdomen by drawing it in a line which would correspond with the ischio-pubic rami, if they were prolonged forwards; and it is from this last circumstance that some have of late endeavoured to maintain that the canal of the urethra is perfectly straight, or nearly so. Mr. Amussat has shown that we may, by drawing upon the penis in a certain manner, not only efface the anterior curvature, but also obliterate, in a great measure, that which is under the symphysis of the pubis, so as to render easy the introduction of instruments which are not curved into the bladder. This question had already been decided in the affirmative by Lieutaud in his Medicine Pratique, and by M. Montaign, in his thesis of 1810, when Gruithuisen published in the Salzbouurg Gazette of 1813, that straight sounds would readily penetrate into the urinary pouch, and that these sounds would permit the use of diverse instruments for the purpose of breaking down calculi, or of decomposing them by galvanic currents. These facts, however, had fallen into oblivion, when in 1818 or 1820, and subsequently, MM. Amussat, Leroy (d'Etiolle), and Civiale, resumed the question ab ovo, and in
such a manner that the former, by his researches upon the urethra and the straight sound; the second, by his lithontriptic instruments, and the third by his brilliant experiments upon the living subject, have succeeded in making this branch of practical surgery one of the most important and interesting of the present epoch.

But let us first examine the urethra in its four portions; afterwards we will resume the consideration of its direction.

1st. The prostatic portion is from twelve to sixteen lines in length, and is enveloped by the gland from which it derives its name, so that this is the proper place for examining the latter organ.

The prostate gland has the form of a cone flattened upon its posterior surface, its apex turned forwards. It is very small in children, but enlarges with age, and at from eighteen to twenty-five years, its greatest breadth is two lines less than in the man of forty; in old age, and in persons afflicted with diseases of the bladder, its volume is sometimes much greater: its dimensions must be studied with the greatest care, and the surgeon cannot be too familiar with them when he wishes to perform lithotomy. Upon this subject we may examine the thesis of M. Senn,* the treatise of Scarpa on Lateral Lithotomy, those of M. Amussat,† etc. Its greatest diameter from behind forwards, that is to say, from its base to its apex, is sixteen lines; by measuring at different heights, its length gradually diminishes, so that at its most superior part it is not more than four or five and a half lines; by cutting it perpendicularly and transversely near its base, we find that the largest section, through which the canal of the urethra passes, is thirteen or sometimes even sixteen lines from above downwards, and that the dimensions of those which follow, diminish gradually to the apex. But it should be observed, that the circumference of this gland is not exactly circular, and that the urethra does not pass through its centre, so that in

† Archives générales de Médecine, Janvier, Avril, 1824
order to have our measurements precisely surgical and practical, it is better to imitate M. Senn, and draw different radii from the canal of the urethra to the principal points of the circumference of the prostate: thus, the inferior radius will be six, seven, or eight and a half lines, very seldom more; directly across we find nine and a half lines, and downwards and outwards, the direction in which the instrument must penetrate in the lateralized lithotomy, from ten and a half to twelve lines. The inferior, or posterior surface of the prostate is its flattened portion; it rests upon the anterior surface of the rectum, as far as two inches and a half, or three inches, above the anus; it is separated from this intestine by a thin layer of lamellated cellular tissue only, in which fat is never deposited, so that it is very difficult to avoid wounding the rectum when the lithotome completely divides the posterior half of the prostate; and if it is true, that the section of this gland should never be complete in the sub-pubic operation of lithotomy, if we wish to avoid serious consequences, it will follow that in cutting by the rectum, we will not obtain, without danger, an opening so extensive as by the lateralized or transverse methods. The pubic surface of the prostate is always from six to eight and a half lines distant from the symphysis; its lateral portions are removed from six to eight and a half lines from the ischio-pubic rami, according as we examine it from its superior towards its inferior part, which we may easily determine by recollecting that the transverse dimensions of the gland at its broadest part, are from nineteen to twenty-one lines, and by measuring transversely the arch of the pubes at the points corresponding to the superior, middle, and inferior portions of the prostate, we will find from twenty-one to twenty-three and a half, twenty-five and a half to twenty-six and a half, twenty-eight to thirty lines, so that this body is nearer to the internal pudic artery, the more we approximate to its superior part. Between the symphysis, the rectum, and the pudic artery, there are a great many other parts which more or less immediately surround the prostate: thus, it is enveloped by a more or less distinct layer of fleshy fibres, running in a longitudinal direction, and confounded, as
it were, with its proper tissue; these fibres, which we have frequently followed as far as the bladder, and which appear to us to be an appendage to the muscular tunic of this pouch, become more evident towards the superior portion of the gland, so that above, for example, they are almost the only parts which exist upon the upper surface of the canal of the urethra, and it is doubtless from this circumstance, that M. Amussat has said, that the prostate is not perforated by this canal, but that it is merely grooved out for its reception. We must admit, that we have more than once met with the disposition indicated by this anatomist, that is to say, that the glandular tissue terminated upon the sides of the canal, so that the anterior surface of the latter was in immediate contact with the fleshy fibres; but we think that he has gone too far, in drawing from this case a general conclusion: in fact, it is very easy to convince one’s-self that the prostate gland, in the majority of subjects, forms a complete circle around the urethra; it is true, that as the canal passes through this circle it lies much nearer its superior than its inferior part, although the contrary is sometimes observed,* which would, moreover, be a very dangerous disposition, as it would then be very difficult to avoid the rectum, except by the transverse lithotomy. In addition to this species of fleshy envelope, the prostate also receives upon its superior surface two small muscular fasciculi which appertain to the levator ani, and are detached from it behind the symphysis of the pubis, descending almost perpendicularly upon the membranous portion of the urethra; they vary in strength in different individuals, and are known in England under the name of the muscles of Wilson, (musculus constrictor urethrae): the gland is afterwards enveloped by an almost complete fibrous sheath, which is continuous on the one hand, with the recto-vesical aponeurosis from which it seems to originate, and on the other, with that of the perineum upon which it terminates after having expanded over the membranous portion of the urethra; finally,

* M. Senn, loc. citat.
on the outer surface of this aponeurosis we find cellular tissue, which is lax and abundant anteriorly and laterally; very dense posteriorly upon the median line, and much less so externally. The base of the prostate envelopes the neck of the bladder like a cap, at the place where it terminates in the commencement of the urethra; it also receives the vasa deferentia, which touch one another upon the median line where they are about to dip into it; external and posterior to these ducts are the vesiculae seminales; so that in penetrating into the bladder by the rectum, according to the original method of M. Sanson, that is to say, by opening the bas-fond of the bladder, at the same time that we incise more or less the basis of the prostate gland, we almost always cut one of the seminal ducts, and frequently the vesicula, for it is scarcely possible that any surgeon can be sure of not deviating half a line from the median line when dividing the anterior paries of the rectum.

Now this accident, which does not appear serious to MM. Sanson and Vacca, is considered by Scarpa so dangerous as to induce him to reject the recto-vesical lithotomy. In fact, it is proved, from several cases, that a division of the excretory canals may be followed by their obliteration and atrophy of the gland; and, with respect to the testicle in particular, Lapeyronnie has related an example which shows that an obliteration of the vas deferens may occasion the loss of the seminal gland. It is necessary to observe here that the ejaculator ducts enter the prostate in such a manner from behind forwards, that they pass through almost the whole length of this gland; so that in the operation of lithotomy by the rectum, one of them will necessarily be divided, whatsoever precautions we may take, and two serious consequences may then result from it; viz. inflammation of the testicle, an inflammation which will be transmitted to it by the duct which unites it to the canal of the urethra; or the cicatrix will alter the relations of the divided extremities of the seminal ducts, and their separate obliteration will be followed by sterility, and perhaps by atrophy of the testicle: a result which may also succeed.

*Laggio di osservazioni sul taglio retto-vesicale, etc. Pavia, 1823.*
the former case. Furthermore, every one knows how common it is to see a swelling of the scrotum supervene during gonorrhoea, the use of bougies, catheters, and after the operation of lithotomy even by the lateralized method.

In some subjects the posterior border of the prostate consists of three lobes, so that, if the middle tubercle should become tumesfied, it will push the neck of the bladder from below upwards, so as to flatten and even obliterate it, this, according to Sir E. Home, is one of the most frequent causes of the retention of urine of old men, unattended with disease of the urethra; but we think that this surgeon has greatly exaggerated the importance of the prostate in his investigation of the diseases which he attributes to this gland. If it is true, as he pretends, as well as Mr. Serres, that it is developed by two lateral lobes, to which at a later period a third is added, we conceive that the two former may unite below the canal of the urethra only, and give rise to the disposition pointed out by M. Amussat; but if, on the contrary, they first become conjoined above the urethra, this canal will then be situated much nearer the rectum. However this may be, the part which this organ performs in relation to the operation of lithotomy, deserves much more attention than has been paid to it until the present day, and in this respect we cannot examine it too attentively. Its form, exact dimensions, relations, and density cannot be too well known by the operating surgeon.

An important rule, from which we should never deviate when we divide the prostate from the urethral canal to its circumference, consists in not prolonging the incision, in any case, beyond its periphery; for if we neglect this precaution, as the neck of the bladder is divided to a greater or less extent, and as the lips of the wound of the prostate are no longer maintained in contact by the solid tissues which surround this gland, or by a vinculum of its parenchyma of a certain thickness, they remain separated, so that the urine can readily become extravasated into the circumjacent cellular tissue. Under such circumstances we have two things to apprehend; urinary fistulae, or inflammation of the more or less abundant cellular tissue, which surrounds the prostate and the neck of the bladder. The
latter accident is the most formidable and frequent: this alone destroys more patients than all the others combined; when death takes place in the course of the first weeks which follow the operation, we sometimes find its cause in peritonitis; but generally this phlegmasia is only an effect of the more or less extensive inflammation of the cellular layer which exists between the prostate and the rectum, between the prostate and the pubis, between the perineal fascia and the pelvic aponeurosis; a cellular layer which is also prolonged between the peritoneum and the bladder, so as to enter into the fascia propria. It is sufficient to examine attentively the bodies of those who perish in consequence of the sub-pubic lithotomy, in order to be convinced of the correctness of what we have advanced; and Dr. Key perfectly coincides in this opinion,* consequently, all the efforts of the surgeon should tend to divide this gland in its greatest possible extent without ever passing completely beyond its circumference. Now, according to this principle, by what method can we obtain the greatest advantages? The question is easily solved; by the apparatus major, the incision did not extend so far as the posterior part of the prostate, it is true; but then the origin of the urethra was not divided, and it afterwards became necessary to dilate or lacerate, or the vesical opening would necessarily remain very small, notwithstanding the extent of the wound of the external soft parts. By following the method of Foubert we avoid the prostate; we penetrate through the great ischio-rectal cellular space, and thereby incur the dangers of which we have just spoken. By the lateralized† method, if we imi-

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† It may not be improper to define here what the French understand by the Lateralized and Lateral operations of Lithotomy.

Appareil Lateralizée (Lateralized apparatus). This method, which is almost exclusively adopted at the present day, except in those cases in which the excessive magnitude of the stone obliges us to cut above the pubes, this method, I say, consists in making upon the skin of the left part of the perineum, an incision which is begun at about an inch above the anus, and
tate Boyer, that is to say, if we withdraw the lithotome transversely, by applying the back of its sheath against the right pubic ramus, in order to avoid the rectum on the one hand and the pudic artery on the other, it would be dangerous to give more than ten lines and a half to the incision, since the transverse radius of the gland presents but nine, and only two or three lines more can be added for the urethra. By the operation of Cheselden, on the contrary, whether we adopt the modifications recommended by Ledran, Pouteau, Moreau, Lecat, Frère Cosme, &c. as we divide the gland parallel to its greatest radius, that is to say, obliquely outwards and downwards, it is evident that we would obtain two lines more without danger; so that in this point of view the lateralized method, properly so called, should have the preference. By the recto-vesical method, which only deserves this name when we divide the bas-fond of the bladder behind the prostate, we see that this gland, in the other process, will admit of an incision only eight lines and a half to the vesico-urethral neck, notwithstanding a great part of the membranous portion of the urethra, and the whole length of the prostatic portion may be divided; so that far from obtaining, by this method, a very large opening, it will, on the contrary, always be smaller than by the other processes, whenever the incision does not extend beyond the gland upon the neck of the bladder*. As it res-

terminates at the middle of a line which would be drawn from the anus to the tuberosity of the ischium; in dividing the adipo-cellular tissue which fills the space between the erector penis and accelerator urinæ muscles; in afterwards incising the transversalis perinei, and the anterior fibres of the levator ani muscles, the membranous portion of the urethra, the neck of the bladder, and the left lateral part of the prostate, &c.

Appareil Lateral (Lateral apparatus.) This method, invented by Foubert and Thomas, is distinguished by an incision made in the perineum along its external part, and by the section of the lateral part of the body of the bladder without touching either its neck or the urethra, &c. Dictionnaire de Medecine, tome 13. (Trans.)

* The foregoing sentence will be rendered less obscure by stating that there are two methods of performing the recto-vesical operation: in the first, we divide the anterior, inferior, and median part of the rectum, the membranous portion of the urethra, the neck of the bladder, and the prostate;
pects the lithotomy of Celsus, according to the method of Dupuytren, it is evident that we may obtain by it ten and a half lines on each side, since the two blades of the instrument follow, in coming out, the greatest radius of the gland; to this we may also add the breadth of the canal of the urethra, which may extend to four or five lines; besides, as this double oblique incision circumscribes a triangular flap, including the ejaculator canals, the verumontanum, and the inferior half of the prostatic portion of the urethra, we conceive it possible, rigorously speaking, to obtain a wound about two inches in extent without serious consequences. Finally, in operating as advised by Thompson in 1806, and Dupuytren, that is to say, that if, after the lithotome or bistoury has entered into the bladder, the surgeon, instead of drawing it downwards and outwards, directs its cutting edge, on the contrary, upwards towards the arch of the pubis, thereby dividing the superior part of the prostate and of the neck of the bladder, we may readily perceive that he will incur the inconveniences arising from the lateral method of Foubert, and that the urethra, open above and below, will present two very broad slits (bou-tonnieres) without actually rendering the extraction of the foreign body more easy, since the superior radius alone of the gland will be divided. We will now pass in review the different parts of the canal of the urethra.

That portion of the canal which is included in the prostatic gland is infundibuliforme at its point of union with the bladder; a line or two anterior to this it is a little narrower; it then expands, and again becomes contracted at the commencement of the membranous portion. These peculiarities are most remarkable upon its inferior paries. The neck of the bladder was for a long time supposed to be a sphincter by anatomists, but surgeons of the present day generally deny that it performs this office; Mr. Amussat, however, by his

in the second, these lasts parts are avoided, and the instrument merely cuts through the parietes of the intestine and the bas-fond of the bladder which is applied against it, (Vide Dictionnaire de Medecine, tome xiii. p. 221. (Trans.)
interesting researches, has again attempted to make it perform a very important part in relation to catheterism. This anatomist supposes that there exists at this point a perfect valve, in which we sometimes meet with transverse fleshy fibres, and against which the beak of the catheter not unfrequently strikes. From our own investigations we are induced to say that this valve, called pyloric by M. Amussat, does not in reality exist, at least in most individuals; but that the point of origin of the urethral canal is here raised by the posterior margin of the prostate, and that all its membranes, although not disorganized, present a greater degree of thickness at this point than elsewhere: in the middle of the species of excavation which exists between this contraction and that which is anterior to it, we observe the urethral crest, or verumontanum. This eminence, situated upon the median line, divides the inferior paries of this canal into two equal portions, over which the extremity of the catheter must glide before it reaches the bladder; and as the mucous membrane in this place is very thin, and the excavation sometimes of considerable depth, it becomes necessary, in order to avoid making an artificial passage, to keep the beak of the instrument against the superior wall of the urethra. Mr. Lisfranc says that he has seen this excavation, in some subjects, as much as three or four lines in depth. The crest itself is an essential organ, and requires much attention during the employment of bougies, the catheter, and especially when we introduce caustic into the urethra, because its irritation is very readily transmitted to the testicle by the vas deferens. It terminates about ten lines and a half anterior to the neck of the bladder, where it forms a kind of tubercle, upon the middle of which we observe the mouths of the ejaculator ducts,*

*The inferior extremity of the vesicula seminalis and of the vas deferens terminate in an extremely narrow duct of some lines in length, which we call "canal ejaculateur," (ductus ejaculatorius). This duct converges from behind forwards, and from above downwards, towards that of the opposite side, penetrates into the substance of the prostate, and opens into the urethra immediately by the side of the latter in the middle of the verumontanum. (Meckel. Tome iii. p. 360.) (Trans.)
and upon its sides, the orifices of the excretory ducts of the prostate are arranged in two rows, like the letter V. the point of which is turned forwards.

It is not very unusual to see this tubercle depressed at its centre, in which cases it is supposed that the extremity of the instrument, which we are endeavouring to pass on to the bladder, may become insinuated into it, a circumstance which would not fail to lead to somewhat serious inconveniences in consequence of the lesion of the seminal ducts. But if it is true that this obstacle is sometimes met with, since Mr. Lisfranc has seen several cases in which a catheter of large calibre might be very easily introduced into this cul-de-sac, yet it must be admitted that the difficulty more frequently arises from its being stopped in the bottom of the lateral sinuses. The verumontanum, in prolonging itself backwards to form the vesical uvula (luette vesicale*), sometimes expands and gives origin to two small lateral folds which are concave anteriorly, and which then actually present the appearance of two very thin and almost indistinct valves. May not these folds have imposed on M. Amussat? Be this as it may, it is easy to comprehend that if from some cause or another they should be developed more than usual, they might lead to considerable difficulties in the introduction of the catheter. As the verumontanum passes towards the membranous portion, that is to say, forwards, it now and then presents a disposition similar to the preceding; but then the concave margin of the fold is directed forwards; neither does this appear to be very rare, for we have met with it three times, and it is delineated in Langenbeck's Treatise on Lithotomy, published in 1802.

This portion of the urethra, being enveloped by the prostate, is generally less extensible below than above, and the difference in this respect is very remarkable, especially in those

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* Luette vesicale, Lieutaud has given this name to a small tubercle situated at the inferior part of the neck of the bladder, corresponding to the anterior angle of the vesical trigonum. It is sometimes almost indistinct, at others more strongly marked, etc. Dictionnaire de Medicine, Tome xiii. (Tr.)
subjects in whom the gland does not form a complete circle around the canal: then the superior wall is thick, muscular, very strong, and its extensibility permits us to obtain a considerable dilatation for the extraction of the stone without laceration; so that it is very difficult to make a false passage by following this superior paries, whereas it is not so with respect to the inferior portion. When the canal is reduced to its simple elements, i.e. when it is divested of the prostate, its thickness above is scarcely changed; its inferior portion, on the contrary, is then very thin, and consists almost solely of the mucous membrane covered by a thin layer of fibrous tissue, which layer is a little thicker in the situation of the two contractions mentioned above. In fine, it seems that the prostatic portion of the urethra is merely a simple prolongation of the bladder, between the membranes of which the prostate is developed in such a manner that it derives a sheath from the muscular tunic, whilst its inner surface is lined by the mucous membrane covered by its fibro-cellular tissue.

In the adult, the prostatic portion of the canal of the urethra is so large or dilatable, that we may introduce into it, from the bladder, the extremity of the indicator without producing any laceration, as Deschamps and M. Carcassonne have already remarked; it will always stop, however, at the anterior contraction, which we have never been able to penetrate in this manner; whence it follows that, in the extraction of calculi, we may always rely upon five, six, seven, and even eight and a half lines of dilatation in the posterior part of the urethra. In the child, this portion is always raised more than in the adult, because the bladder, being more approximated to the umbilicus, tends to draw it behind the pubes. In women during pregnancy, the same phenomenon is produced by the growth of the uterus, and so also in man when the rectum is loaded with faeces. It must be observed, however, that this elevation, and the curvature which results from it, are much less than is generally supposed. M. Amussat has, in fact, demonstrated that the latter may be almost completely removed by drawing upon the penis in such a manner, as to make it describe with the fore part of the pubes an angle
of about forty degrees. By so doing, the prostate is drawn under the arch of the pubes, and the posterior part of the canal, which was a little more elevated, is then found on a level with the bas-fond of the bladder, so that a straight instrument passes with the greatest facility into this cavity, and it permits us to introduce those of a much larger size than if they were curved; to overcome obstacles with greater facility, because we can always rotate these straight rods upon their axes as we propel them onwards; to effect a considerable dilatation, and thereby be able to pass catheters of a very large calibre, and every variety of instrument for the purpose of breaking down and extracting calculi. To us it appears that this new discovery must be fruitful in advantageous results, and the period perhaps is not remote when the major part of calculous individuals will be cured without the necessity of cutting into the perinaeum; we know, moreover, with what zeal, with what ardour, MM. Amussat, Leroy and Civiale, are engaged in bringing to perfection the lithotriptic processes devised from this idea. The interesting work of Dr. Key on lithotomy, after the method of Cheselden, is founded upon the same principle; and we observe, from the elegant engravings which accompany his treatise, that he has arrived at the same result with our colleague M. Amussat, that is to say, he has ascertained that we can render the canal of the urethra straight, or nearly so, that we can and should perform lithotomy with a straight staff, which offers the great advantage of permitting the groove of the staff to be turned in whatsoever direction we judge most proper. We will here remark, that Mr. Key has not spoken of M. Amussat, notwithstanding it is very difficult to believe that the researches in which our fellow-citizen has long been engaged have not come to his knowledge. His silence upon this subject gives some foundation to the charges which have already been frequently brought against some English surgeons, who very often repeat in London discoveries long since made in Paris, without intimating the source whence they derive them.

We do not mean to infer, from what has been said above, that the prostatic portion of the urethra has no curvature, but
merely that it is easy to efface the curvatures, and to employ straight instruments when they appear most suitable for fulfilling certain indications. Every person agrees, says Mr. Amussat, that the urethra of the female is straight, or nearly so; therefore, why not admit the same thing with respect to the prostatic portion of that of man, since it is not more raised by the prostate gland in the one than by the vagina in the other? The comparison is not correct, and doubtless Mr. Amussat did not consider that in consequence of the pelvis in man being narrower, his bladder is more raised behind the pubes; that as the symphysis of these bones descends a little further, the urethra must necessarily be more curved, and also, that in those cases where the symphysis extends to twenty-five and a half or twenty-six and a half lines, as has been observed by M. Leroy*, instead of twenty-one lines, which is the average extent, this curvature will be so great as to render the introduction of a straight staff at least very difficult, if not impossible.

(b.) The Membranous Portion. This is about an inch in length superiorly, and is situated under the arch of the pubes, from which it is separated by a space of about six lines, a space which is filled by cellular tissue, and by the small muscular fasciculus, known by the name of Wilson’s muscle, which descends from the posterior part of the symphysis upon the urethra, anterior to the prostate. Through this space the dorsal veins of the penis enter the pelvis in their course to the hypogastric vein, and through it the corresponding arteries also pass, after leaving the ischio-pubic ramus, in order to reach the dorsum penis. Sometimes these two arterial vessels unite, forming only a single dorsal branch; occasionally this anormal re-union is not attended with any alteration in the disposition of the pudic arteries themselves; but at other times it is owing to the dorsal arteries of the penis deriving their

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origin from one of the branches of the internal iliac, as we have observed in two subjects, and, in this case, if we examine the vessel from before backwards, we will find that, from being single without, it bifurcates at its entrance into the pelvis upon the fore-part of the neck of the bladder, and that the two branches of this bifurcation may be traced to the vesical or ischiatic arteries. Such a distribution would necessarily lead to haemorrhage, if the operation of lithotomy was performed according to the method of Fouber, and it would still more certainly follow that of Thompson and Dupuytren, that is to say, if the urethra and neck of the bladder are divided in their superior paries; the same accident might also happen in operating for the stone with the gorget, as modified by Scarpa.

Inferiorly, the membranous portion of the urethra appears shorter, because the apex of the prostate and the bulb converge towards each other, in consequence of which a species of hollow is formed, at which we must always penetrate when we perform the sub-pubic lithotomy upon the median line. This hollow, bounded posteriorly by the fore-part of the rectum; anteriorly, by the bulb; laterally, by the recto-vesical aponeurosis and the anterior portion of the rectal lamina of the ischio-rectal fascia; inferiorly, by the most remote part of the perineal ligament, or deep-seated lamina of the perineal aponeurosis, properly so called; this hollow, we say, is filled by a dense fibro-cellular tissue; by some arterial and venous twigs, and, between the aponeurosis and skin, by the intersection of the transversi perinei muscles, the arteries of the bulb, and the sub-cutaneous layer. The membranous portion of the urethra is more immediately enveloped by a prolongation of the fibrous sheath of the prostate, which gives to it additional strength. In still more intimate connection with it we find a complete muscular tunic, which is sometimes very distinct and strong, at others, on the contrary, resembling the yellowish tissue. The arrangement of this muscular membrane is so remarkable that it is worthy of a moment's consideration. Thus, the most external fibres are vertical, and are evidently derived from the expansion of the muscle of Wilson, and as
the fixed point of this muscle is behind the pubes, its contrac-
tions may draw the urethra more or less upwards, but without
compressing it in a very evident manner. The deeper seated
are parallel to the direction of the canal, and appear to be a
continuation of those which surround the prostate; that is to
say, they seem to originate from the neck of the bladder,
and in such a manner that, being crossed by other annular
fibres, when their contraction takes place, the urethra may be
firmly constricted, so as to repel the bougie or catheter which
we are attempting to introduce into the bladder: in this way
we may account for that spasmodic stricture, which is observ-
ed by all surgeons, rendering the introduction of the catheter
impossible for a few minutes, but afterwards admitting of its
ready passage.

Internally, this part of the urethra is narrower than that in-
cluded by the prostate, so that it expands as it becomes con-
founded with the latter, and also again grows wider as it
enters the bulbous portion: whence it follows, that foreign
bodies in their course along this canal frequently stop at this
place, and that it is generally between the spongy and mem-
branous portions that we most frequently meet with false pas-
sages after forcible catheterism. As the membranous por-
tion of the urethra grows wider before and behind, it seems
to become so much the weaker, because its more external
laminae separate for the purpose of enveloping the prostate
or the bulb; it is in its middle portion, therefore, that its
strength is greatest: so that the catheter does not deviate in
the excretory canal of the urethra until it has entered the
membranous portion, or rather, until after it has passed beyond
it, because the species of anterior neck is also strengthened by
the perineal ligament, through which it passes as it comes
from the pelvis, and farther, because at this point the penis
raises up the urethra considerably. But it is necessary to
observe that if the instrument makes a false route at this part,
it may continue to glide under the aponeurosis as far as the
anal region, and in this direction the accidental passage will be
less dangerous than in those cases in which the catheter passes
to the circumference of the prostate and of the neck of the
bladder. However, the inferior paries alone presents these peculiarities, and the extremity of the catheter runs no risk of deviating if we follow exactly the superior portion. Finally, we may say that the membranous portion of the urethra possesses the most part of the characters of structure which appertain to the bladder; that is to say, the fleshy tunic still exists in it, and that the ancients, guided by their philosophical ideas of anatomy, had very correctly observed that the urinary reservoir and its canal were only a continuation of each other in organization as well as in continuity, and that the name "fleshy," or "muscular," which they gave to this portion of the urethra, and which Mr. Amussat has again proposed, was perhaps more appropriate than that of membranous, which we employ at present.

(c) The bulbous portion is merely the origin of the spongy portion, and is particularly remarkable for the pyriform expansion of its proper tissue as it is prolonged backwards below the canal, and which is called the bulb of the urethra. This bulb is separated from the skin by the superficial cellular layer and the accelerator urinae muscle, so that in thin persons it may be easily distinguished externally. It is only about one inch distant from the anus, and sometimes this distance is much less; therefore, in order to reach the membranous portion of the urethra in the operation of lithotomy, we have two dangers to avoid,—wounding the rectum, if we cut too far back,—and the division of the spongy tissue, if we remove more than one inch from this intestine. There is doubtless less danger in the latter case than in the former; notwithstanding hemorrhage may follow from dividing the transverse perineal artery, as also that of the bulb; but it is easy to avoid wounding the bulb, even when the incision is begun further forwards, and it is sufficient for this purpose, after the division of the integuments, to cut upon the nail of the left index finger, at the same time that we depress towards the right the internal lip of the wound. By proceeding in this manner there is no danger of perforating the rectum, and the artery of the bulb is the only one which may be divided: now, as it is seldom avoided, even when the anterior angle of the wound
is made much nearer the anus, it appears to us to be advantageous to commence the incision, in the lateralized lithotomy, sixteen and even nineteen lines before this aperture. By the apparatus major, the incision being made upon the median line, the bulb was necessarily divided; by following that of Celsius, it is always avoided, since by the method of Beclard, as well as that of Dupuytren, the concavity of the semilunar wound should be upon the perineum only six, eight, or ten and a half lines before the anus; finally, by the process of MM. Sanson and Vacca, in the recto-vesical lithotomy, the bulbous portion and the greater part of the membranous portion are avoided.

In examining the urethra and its bulb from before backwards, we see that they follow a different direction; and this circumstance, upon which Mr. Amussat lays great stress in attempting to prove that the urethra is straight, or nearly so, seems to us to prove directly the reverse. For if the penis is erect, or is placed in the direction which it then assumes, the bulb is prolonged backwards in the same line directly towards the anus; that is to say, if the urethra followed this direction, it would be exactly straight, and would present no curvature; but on the contrary, it deviates to such a degree from this line, that in penetrating by the perineum, it is necessary to cut through parts an inch or an inch and a half in depth, and sometimes even more before we reach the prostatic portion; therefore we must conclude that as the urethra, in its natural state, passes under the arch of the pubes, it must form a considerable curvature, but that this curvature may be greatly diminished, and even almost effaced, by drawing upon the penis, and thereby easily permit the entrance of a straight staff into the bladder, although it is better to employ curved instruments whenever particular indications do not demand the other.

When we examine the bulb in its relations with the urethra, we see that it is at first separated from this canal by a triangular space, which makes a part of the bulbo-rectal hollow, it soon approximates its inferior paries, and a few lines further forwards it terminates by forming a layer which envelopes it
almost completely; or rather, it seems as if the erectile tissue primitively included between the coverings of the urethra, becomes gradually raresied, dilated downwards and backwards in order to produce this bulb, so that, in consequence of the laminae of this canal being much more separated at this point, it is rendered weak and lacerable previous to its entrance into the membranous portion; and its anterior contraction, which may be easily felt by sliding the finger over its inferior parietes, appears to be owing merely to the approximation or more intimate union of these same laminae, which are then of a nature completely fibrous.

This portion of the canal terminates at its entrance into the inferior groove of the penis, where it assumes the name of the spongy portion.

(d) The spongy portion, therefore, is not separated from the bulbous portion by any distinct line of demarcation. Considered externally, it insensibly decreases as far as the anterior extremity of the corpora cavernosa, where it swells out and expands to form the glans; the erectile spongy tissue, which is still included between the coats of the canal, is thicker as it approximates the bulbous extremity; and as the fibrous tissue which envelopes it is almost inextensible, it follows, that during erection it considerably diminishes the calibre of the urethra: therefore when priapism exists, the urine is with difficulty evacuated; but this state is, on the contrary, very favourable to the emission of the semen, because being previously poured by the ejaculator ducts into the prostatic excavation, it is forced to pass from a broader into a narrower channel, and in consequence of a law of nature, its exit is thereby rendered much more rapid, so that it is ejected to a greater or less distance into the sexual organs of the female: we moreover conceive that, having passed into the membranous portion, the fleshy tunic of this part assisted by the ejaculator muscles must tend to throw it out by jets. Finally, this portion of the urethra is covered by the skin of the penis and the subcutaneous layer only; superiorly, it is so firmly united to the groove of the penis, that some persons have supposed that the canal of the urethra was developed between the layers of the fibrous
of the Ano-Perineal Region.

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sheath of the corpora cavernosa; but these two parts are in fact only united by albugineous filaments and some very small vessels, which permit fine injections to penetrate into the corpora cavernosa, though thrown in at the bulb, and vice versa.

Internally, the spongy portion of the urethra contracts but very slightly from the posterior to the anterior part; behind the meatus urinarius it is considerably dilated, and forms the fossa navicularis. The existence of this dilatation appears to us to be real, and we think that the anatomical reasons assigned by Mr. Amussat in order to prove the contrary, are very far from satisfactory; indeed it is sufficient to fill the urethra with a fluid capable of coagulating upon cooling, to be convinced that this canal is dilated at this point. In the living subject the same result may be obtained by allowing a soft bougie to remain in it for a few minutes; and if it is true that after death, the texture of the glans being more dense, keeps the mucous membrane more dilated and tense at this point, whereas the spongy tissue behind shrivels and returns upon itself, the same thing equally exists during life, so that the whole is reduced to a mere dispute of words. Finally, the fossa navicularis, as well as the other dilated portions of the urethra, exist upon the inferior paries of the canal particularly; it is here that the inflammation generally commences in gonorrhoea; and some persons have even supposed that the disease became dangerous when the inflammation extended beyond this point. The mucous membrane of the urethra is white, having a reddish tinge throughout its whole extent; upon each paries there is a whitish line more or less distinct, extending as far as the bladder, and which is supposed by several modern anatomists, to be a species of suture resulting from the union of the two halves of which this canal is composed in the early days of intra-uterine existence.

This membrane is plicated longitudinally, and as these plicae are produced by the canal, from its simple elasticity, returning upon itself when empty, after the distending cause has been removed, it follows that the fossa navicularis, which does not undergo these changes, is destitute of them: between these folds we find others less distinct, transverse or semi-
lunar, having their concavities directed forwards, which, if they were more developed, would form so many valves, and which limit small spaces known by the name of Lacunæ Morgagni. It is rare that these lacunæ are so deep as to check the passage of the catheter; but the following are the obstacles which this instrument may meet with previous to reaching the bladder:

First, we find the meatus urinarius considerably contracted in comparison with the fossette behind it. Having passed the posterior limit of this fossette, the instrument readily penetrates as far as the suspensory ligament of the penis, provided its beak is directed along the superior portion of the canal, for if we carry it along the inferior paries, we run the risk of folding the membrane, and thereby creating obstacles. At this place the urethra appears to be weakened by a sort of crease (brisure), which results from the position of the part during relaxation, so that at this point some precautions are necessary; afterwards the instrument passes freely to the termination of the bulbous portion, where it is liable to deviate and tear the cul-de-sac which is there met with, unless the beak of the catheter is kept exactly applied upon the superior paries. Having entered into the membranous portion, it proceeds without danger into the prostatic portion; but then it may wound the verumontanum, or be stopped in its central depression, when it is very deep, and especially, lacerate the bottom of the sinuses on each side of this crest, and pass through the prostate gland: lastly, when the fold which Mr. Amussat calls the "pyloric valve," exists and presents a certain development, it forms a final barrier, beyond which we cannot pass but by elevating very considerably the beak of the catheter. During this operation it must not be forgotten, that the urethra is an extensible canal, capable of being gradually dilated to such a degree, as to admit of the introduction of a cylinder of four or five lines in diameter, and so elastic that it readily resumes its primitive calibre after a similar dilatation: in consequence of this fact, it is that, on the one hand, when pathological contractions exist, the benefits obtained by the use of dilating bougies, soon disappear after
they have been laid aside; and on the other, that we are enabled to introduce into the bladder without inconvenience, large straight sounds, which afterwards serve to conduct other instruments for the purpose of seizing, breaking, or extracting calculi, contained in this organ. In consequence of this extensibility, also, stones of considerable volume sometimes insinuate themselves into the urethra. Finally, we may readily infer, that when foreign bodies have once entered it, they will be most likely to stop at the prostatic excavation, or at the origin of the bulb.

We possess a certain number of examples, in which the canal of the urethra is not prolonged to the extremity of the penis, and in such cases, the meatus urinarius is found on the inferior surface of this organ more or less approximated to the pubis. This disposition appears to originate from a simple defect of evolution, that is to say, that the cavernous bodies are developed in the ordinary manner, but the urethra remains in its rudimental state, and consequently is removed to a distance from the extremity of the organ. *Epispadias*, or cases wherein the meatus urinarius is situated upon the dorsum of the penis, are also spoken of; but this is so rare an anomaly, that the small number of examples cited of it, do not even bear the impress of authenticity: they are, moreover, much greater deviations from the natural order than all the others.

10th. The Neck of the Bladder.

By the neck of the bladder, we mean that portion of this reservoir which extends from the point where the peritoneum abandons it, to its entrance into the prostate, and we think, with *Scarpa*, that the part included in this gland, should appertain entirely to the description of the urethra.

The anterior and lateral parts of this portion of the bladder are enveloped by a species of veinous plexus, which is much enlarged in those who have long suffered under disease of the bladder, and is included in a lamellated, supple, extensible, and sometimes very abundant cellular tissue, which extends
between the pubes and bladder above the symphysis; it is the same cellular layer which we observed around the prostatic portion of the urethra; it separates the neck of the bladder from the levator ani muscle and the recto-vesical aponeurosis, and in such a manner, that by cutting the prostate from below upwards, the superior paries of the urethra and the termination of the bladder, according to the process of Thompson, inflammation from urinary infiltration, or phlegmonous inflammation simply, will most frequently be developed in it: so with respect to the lateral operation, especially that of Foubert and of Thomas, the urine will almost inevitably extravasate into this layer, unless an urinary fistula should form. For, the fleshy fibres of the bladder being divided transversely, the two lips of the wound will separate whenever this organ contracts, and thereby impede the formation of the cicatrix; and if the parallelism of the divided edges of the different layers of the wound be deranged ever so little, we conceive that the urine will readily become effused into the lax cellular tissue under consideration. We may also conceive the dangers of this operation when we think of the facility with which the trocar or bistoury may deviate around this organ, when we attempt to perforate it, how they may wound the rectum, if they pass too far back, or the peritoneum, if too far out; or finally, plough between these different parts, if the bladder is not properly distended.

The posterior and inferior part of the neck is the most interesting part of it; we generally call it the "bas-fond"*; it

* The bas-fond of the bladder, extending from behind forwards from the recto-vesical layer of the peritoneum to the origin of the urethra, continuous at the sides with the lateral regions of this organ, without any very distinct line of demarcation serving to separate them, and measured by almost equal dimensions in all directions, is united by solid adhesions to the ureters, vasa deferentia, and vesiculae seminales, which, traversing it obliquely from behind forwards and from without inwards, thereby divide it into three surfaces, two of which are lateral, convex, broader before than behind, situated external to the vesicular seminales, and correspond to an abundant and fatty cellular tissue, which separates them from the levatores ani, whilst the third, central, placed between the two spermatic reservoirs,
is in relation with the rectum, from which it is separated by a simple cellular layer, usually of considerable density upon the median line, and much looser upon the sides. In the first direction it very seldom contains fat, so that the intestinal and vesical parieties seem at first sight to be confounded, and thus form the recto-vesical septum, a septum so thin that we may frequently distinguish by means of the finger introduced into the intestine, the figure of solid bodies contained in the urinary reservoir; and as it does not include large vessels, or other important organs, it has been advised to penetrate, by this point, through the rectum into the bladder. It is thus, for example, that Flurant, of Lyons, perforated the bladder in cases of retention of urine, and that Mr. Sanson first proposed operating for lithotomy.

In either case it would be dangerous to carry the instrument higher than an inch and a half, or two inches above the prostate, because the peritoneum generally descends thus far upon the rectum before it is folded behind the bladder: there this membrane is so intimately united to the two viscera that its position is fixed and seldom varies: so that by keeping within the space just indicated, we are almost certain of avoiding the serous abdominal tunic. In the second, that is to say, upon the sides, the cellular tissue fills the two lateral grooves which result from the contact of the rectum with the bladder, which tissue generally contains adipose cells between its lamellæ, and we always find in it the vesiculae seminales, vasa deferentia and terminations of the ureters. As the latter penetrate the vesical parieties in the outer and most superior part of the bas fond, they are not exposed to the action of the triangular, having a base turned backwards, which corresponds to the peritoneum, and an apex directed forwards, corresponding to the prostate, rests immediately upon the rectum, the curvature of which it exactly follows as far as the gland. There it separates from it, and takes a direction obliquely from behind forwards, and from below slightly upwards, as far as the neck of the bladder, where it is confounded with the origin of the urethra, etc.—Sanson des moyens de parvenir a la vessie par le rectum. Paris, 1817. (Tn.)
instruments in the operations cited above. The vesiculae, together with the vasa deferentia, which run along their internal margin, circumscribe a triangle, the apex of which penetrates the posterior border of the prostate, and which is the only part at which we may operate with safety; but as in the recto-vesical lithotomy we are seldom sure of cutting directly upon the median line, if the incision approximates the gland ever so slightly, we will almost inevitably divide the termination of one of the vasa deferentia, or the commencement of the right or left ejaculator ducts. Further, we may also foresee that, if after this operation the parallelism of the wound is not exactly maintained, whether from the incision being too much on one side, or from any other cause, the urine will readily become extravasated into the cellular layer, and thereby give rise to consequences almost always mortal. On the other hand, it is well ascertained that wounds of the neck of the bladder generally remain fistulous, which might perhaps be explained by reflecting upon the arrangement of the muscular fibres and of the surrounding parts. In fact, some of these fibres are longitudinal, others transverse: the former are more numerous upon the sides and fore part of the neck; the latter, on the contrary, predominate below and behind, where they form the trigone*. Therefore, whether the incision is perpendicular to the axis of the parietes of the bladder, as in the lateral lithotomy, or parallel to it, as in the recto-vesical operation, the bladder will never contract without one set or the other of these fibres tending to produce a separation of the edges of the division, and as, moreover, they are not supported by any solid lamina, we conceive that cicatization will occur with difficulty, and we can scarcely believe that lithotomy, performed in such a manner

* The posterior surface of the neck of the bladder presents an eminence which commences from the orifice of each ureter, is directed downwards and inwards and is united below, and upon the median line at an obtuse angle with that of the opposite side, producing thereby a prominent angle inferi- orly, which is called the vesical trigone, (Trigonus Lieutaudi). Meckel, p. 565, tome iii. Trans.
as to incise the recto-vesical paries between the prostate and the reflection of the peritoneum which separates the perinæum from the pelvis, properly so called, is not a dangerous operation. Sometimes the bas-fond of the bladder, instead of being convex, is concave, and represents a species of groove applied upon the fore-part of the rectum: in such a case the operation of lithotomy by this intestine would be more easy, and by the lateralized method it would be less formidable than where a contrary disposition exists.

The neck of the bladder internally represents a species of triangular funnel, the pipe of which is at the urethra, and which is formed below by the vesical trigone. This trigone, which rests principally upon the rectum in the middle, and laterally upon the vesiculae seminales, receives at its posterior angles the openings of the ureters; but as these canals have run between the tunics of the urinary cyst for the distance of five or six lines, such a disposition results from it that the urine readily trickles into the bladder, but when it has once entered this reservoir, far from being able to regurgitate into the ureters, it, on the contrary, shuts their orifices by the eccentric pressure which it produces; so that the urine acts, in this case, in the same manner as liquids enclosed in vessels possessing a valve. This trigone, and the whole of the bas-fond, are generally on a more inferior plane than that which the commencement of the urethra occupies, which is raised at this point by the prostate. In children this excavation is scarcely evident, or does not exist; the accumulation of excrement in the rectum causes it to disappear; and in very fat subjects it is also pushed much higher, so that it sometimes becomes almost impossible, or at least very dangerous to puncture the bladder from the rectum, in persons in whom the former organ is raised, if I may so say, above the pubes by the adipose layers which surround it. It is at the junction of the neck of the bladder with the urethra that we observe the commencement of the verumontanum, or vesical uvula, as well as the prominence, or sphincter vesicae, when it exists.
We may say that so much of this organ as is situated below the place where it is enveloped by the peritoneum in the pelvis, appertains to the perineal region. It descends obliquely forwards between the sacrum and bladder, until it reaches the level of the prostate, when it turns slightly backwards to terminate in the anus. This portion of the rectum therefore, taken as a whole, presents a distinct curvature, the convexity of which corresponds to the posterior surface of the prostate, and its concavity embraces the extremity of the coccyx; whence it follows that, in order to administer an enema, introduce a suppository, or any other foreign body into this intestine, it is necessary to pass it first obliquely from below upwards and from behind forwards, to the distance of about two inches, and afterwards to direct it upwards and backwards. As the anal extremity of the rectum inclines backwards, it leaves between its anterior surface and the bulbous portion of the urethra a triangular space, through which the instrument must always penetrate in the operation of lithotomy. This triangle is formed superiorly and anteriorly by the membranous portion of the urethra and bulb inclusively; posteriorly by the fore part of the rectum from the apex of the prostate to the anus, and inferiorly by the skin, which forms the base of it. Laterally, this space is limited by the rectal lamina of the perineal aponeurosis. Inferiorly and anteriorly it includes the bulb of the urethra, and the apex of the prostate is met with in its posterior and superior part. In it we find, from the skin towards the urethra, the cellular layer; the origin of the accelerator urinæ, intersected by the extremity of the external sphincter and transversalis perinæi muscles; the termination of the artery of the bulb; some fibres of the levator ani; dense and compact cellular tissue; the basis of the perineal aponeurosis properly so called, and the membranous portion of the urethra. The posterior border of this triangle, i.e. the rectum, may be inclined more or less towards the coccyx; if this inclination is carried very far, we conceive that it
might be very dangerous to make the incision in lithotomy at less than an inch before the anus. In such a case we would seldom fail, especially by the operation of Celsus, opening the rectum before we reach the prostate. This accident would be still more liable to happen in those subjects in whom the intestine is very much dilated immediately above the sphincter, and we have been informed that lithotomy according to the process of Mr. Dupuytren, has once been attended with this inconvenience. When, on the contrary, the anus is not so far back, the rectum is almost always regularly concave anteriorly, as is observed in children, for example. We then penetrate without danger into the bladder; but in making use of the lithotome cachê, it is very easy to divide the rectum at the same time with the prostate, because we are obliged to elevate the handle of the instrument considerably forwards when we are cutting the neck of the bladder. It is under such circumstances that the knife of Cheselden, that of Dubois, or the gorget of Hawkins, not as improved by B. Bell, or Desault, but such as the inventor made use of, or still better, as modified by Roux and Scarpa, that is to say, pretty broad towards its cutting extremity and retaining its groove; it is then, we say, that these instruments might have some advantages over others.

From the apex of the prostate as far as two or three inches above this gland, the rectum being separated from the bladder, the vesiculae seminales, the vasa deferentia, and the prostate itself, only by a cellular layer of but slight thickness, it follows, that the distended urinary reservoir and the gland which surrounds the extremity of its neck, whether tumid or not, depress the fore-part of the intestine in such a manner, that we may readily ascertain their state from the cavity of the latter organ; but, we repeat it, in choosing this route for the extraction of vesical calculi, numerous dangers are to be apprehended, especially if we cut open the bas-fond of the bladder, without dividing the neck of the urethra, bladder and prostate: then we almost always have as a consequence a recto-vesical fistula. Besides, it will frequently happen, that the vasa deferentia or vesiculae seminales will be divided. In the third place,
if the peritoneum descended very low behind the bladder, as Camper once observed,* this membrane would be comprised in this division. If, on the contrary, we follow the process of Vacca, the latter accident will be avoided, and stercoraceous fistulæ will be less liable to happen; but one of the ejaculator canals will uniformly be included, and although the section of one of these ducts may not, perhaps, be always so dangerous as Bell† and Scarpa‡ pretend, yet we know that it may occasion the loss of the testicle.

In subjects habitually constipated, affected with chronic diseases of the bladder, those who have for a long time carried a calculus in this viscus, or who are advanced in age, the veins interposed in the cellular layer which unites the bas-fond of the bladder and prostate to the rectum, sometimes become so much enlarged that their inevitable division in the recto-vesical lithotomy, and occasional section in the lateralized method, may be followed by profuse hæmorrhage. In consequence of the same circumstances, the rectum, especially in old people, becomes greatly dilated above the anus, then instead of being cylindrical upon its anterior surface, it represents a kind of groove, in which the prostate and bas-fond of the bladder are lodged; so that the rectum rises up more or less over these parts, whereby in the lateralized and even transverse lithotomy, it is difficult to avoid wounding the organ of defecation, and the more so because the rectum generally bulges out more on the left side than on the right. This portion of the alimentary tube is likewise sometimes thrown entirely to this side of the pelvis, in the same manner as in other cases, it is very much inclined to the right. From these relations we perceive, that it is a very fortunate circumstance that stercoraceous fistulæ seldom manifest themselves anterior to the anus, for if it should become necessary to operate upon fistulæ in this direction, the urethra, neck of the

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* Demonstrationum pathol. lib. 2, p. 10. † System of Surgery.  ‡ Osservazzioni sullo tagl. retto-visicale, etc.  ‡ Deschamps, tome 3.
of the Ano-Perineal Region.

of the Ano-Perineal Region.

bladder, vesiculæ seminales, vasa deferentia, and arteries of considerable magnitude, would be easily wounded.

Posteriorly and laterally, the rectum is only separated from the anterior surface of the coccyx, the coccygæus and levator ani muscles, by the cellular tissue above the pelvic aponeurosis, which tissue, however, is very abundant, supple, and sometimes contains a great quantity of adipose cells: it is traversed by twigs of the sacra media artery, nervous filaments from the sacral plexus, etc. whence it follows that phlegmonous inflammation may be developed in it, rapidly followed by a copious purulent secretion, which will more readily extend towards the abdomen, than penetrate to the surface of the perineum. Still lower down, that is to say, below the recto-vesical aponeurosis, the rectum is enveloped by the muscles which have just been enumerated, and by the external sphincter; consequently, is it found immediately surrounded by the adipo-cellular tissue which fills the ischio-rectal excavations; so that, in extensive stercoraceous abscesses, it can only be denuded in this latter portion, unless the muscular floor of the perineum, and the two fibrous laminae which covers it, are disorganized or perforated in some points, in which cases the disease is very dangerous and most frequently without resource.

Internally, this organ sometimes swells out in the form of a bag or cul-de-sac, which permits the faeces to accumulate above the levator ani, and this dilatation corresponds to the bas-fond of the bladder, as well as to the prostate. It becomes contracted as it passes through the perineal aponeurosis and sphincter ani, so that it is necessary in most subjects to use a certain degree of force in order to penetrate it: it is generally wrinkled parallel to its length, and these plicæ, or perpendicular columns, are intersected or rather united by transverse rugæ in the form of small valves, the concavity of which is directed upwards. There are a certain number of anatomists and surgeons, who actually admit that these lacunæ of the rectum, possess a peculiar organic structure, which favours the formation of fistulæ in ano; they think, that irritating secretions and foreign substances, lodge more particularly in
these small excavations, and there excite ulceration, which is
soon followed by phlegmonous abscesses and fistulae. It could
not be denied, that this explanation would appear natural,
plausible, and very simple, if, on the other hand, it was
proved, as Sabatier, MM. Ribes, Larrey, Richerand, &c.
pretend, that the intestinal orifice of the fistula is never situated
more than two or three inches above the anus. In fact, this
mode of accounting for these affections, would be strongly
supported by the anatomical arrangement of these lacunæ of
the rectum, which are so disposed, that the mouths of the in-
ferior are directed upwards, whereby they may retain sub-
stances capable of irritating and perforating them; whereas
the superior being turned downwards, are not subject to the
same inconveniences. But, on the one part, MM. Boyer
and Roux continue to believe with Desault, and the ancient
surgeons, that stercoraceous fistulae sometimes have their in-
ternal orifice very high up; on the other, Mr. Ribes has ob-
served, among the numerous cases detailed in favour of the
new opinions, that this opening not only does not extend very
high up, but that almost always it is situated a few lines only
above the sphincter. Therefore the explanation which is de-
rived from these lacunæ, in these two cases, is no longer
admissible, and hence, we cannot regard it as general. Some
modern surgeons have stated that in operating according to
the opinion of Desault, in these diseases, serious danger may
result from it, because in penetrating the rectum four or five
inches above the anus, for the purpose of dividing the fistulous
passage between its two orifices, we incur the risk of opening
the peritoneum in those cases where it descends lower than
usual between the bladder and rectum. If we examine atten-
tively the arrangement of these parts, we will readily convince
ourselves that there is but little foundation for such apprehen-
sions; for from the anal aperture to the most elevated part of
the bas-fond of the bladder, from which the serous membrane
of the abdomen is reflected, the distance is from four to five
inches, and this tunic always descends a little less behind and
upon the sides, the directions in which fistulae are most uni-
formly met with; besides the cutaneous orifice of these sinuses
is generally upon a plane much below that of the anus itself, whence it follows, that we may incise to the extent of six inches without danger of wounding the peritoneum. It must also be noted, that if the rectum was perforated above the pelvic aponeurosis an abscess would form in the pelvis, and for this reason we may conclude, that when the inflammation extends towards the surface, the superior orifice of the fistula is much less elevated than the peritoneum.

The mucous membrane which lines the rectum is supple, thick, and united to the muscular tunic, merely by a very lax and very extensible cellular layer; so that what we frequently call prolapsus of the rectum, is only a fold or protrusion of the villous tunic of this organ. Mr. Dupuytren removes and radically cures this protrusion in adults, by excising a more or less considerable portion of the soft skin which surrounds the anus. In 1620, we saw a woman treated in this manner at the Hotel Dieu, and she was completely cured of this inconvenience four days after, notwithstanding she had been afflicted with it for many years. It appears to us that the efficacy of this operation is to be attributed to the inferior portion of the rectum being rendered more tense, the skin firmer, and the sphincters more solidly supported by all these parts, after the integuments have become cicatrized.

The fleshy tunic consists of longitudinal fibres, which exist almost separately, or at least predominate, as far as on a level with the prostate, and of annular fibres, which gradually increase in number from this point to the skin, where they form that small sphincter previously spoken of when on the muscles of the perineum. The haemorrhoidal arteries and the terminations of the inferior mesenteric creep between these fleshy fibres, where they form a very complicated net-work, the branches of which are lost in the internal tunic: these branches are frequently of considerable volume even at the inferior part, and as they ramify principally in the posterior half of the rectum, they may be divided in the operation for fistula, and give rise to a troublesome haemorrhage.

The venæ comites of the superior haemorrhoidal arteries are of still larger size; and as they form a part of the origin
of the great mesenteric vein which receives almost all the branches of the digestive canal, we may admit with Broussais, that, in diarrhoea caused by an inflammation of the large intestine, leeches are of more service when applied around the circumference of the anus, than upon any other point of the abdomen, because, these veins being destitute of valves, we thereby directly relieve their congestion. It is also from the relations of these veins with the system of the vena porta that the ancients founded a similar opinion with regard to diseases of the liver. These vessels, by their frequent inter-sections between the integuments and the sphincter, the mucous membrane and the fleshy fibres, form a plexus around the anal aperture, and are sometimes transformed into a species of erectile tissue, which, according to Mr. Recamier, is the organic cause of haemorrhoids, whereas other authors continue to regard these tumours merely as varicose and dilated veins. It is evident that there is but very little difference between these two opinions, and that it would be easy to reconcile them; but this appertains to pathological anatomy. We may also note that Mr. Ribes considers these veins as the primitive cause of a certain number of fistulae in ano, because they may become excoriated, and open into the cavity of the rectum.

Children are occasionally born with a mal-conformation of the rectum, and sometimes this organ is simply contracted in its natural opening, as in the cases related by Roonhuysen and Boyer; at other times it is obliterated in its middle, although the anus exists*; or this aperture is closed by a membrane different from the skin, which may be situated at a greater or less distance up the intestine†. In certain cases there is no vestige of an anus, and the skin is as firm and as thick at the point which this opening usually occupies as elsewhere‡. Finally, we find it obliterated throughout its whole

* Petit, Mem. de l'acad. roy. de ch.
† Engerran. Mem. de l'acad. roy. de ch.
‡ J. L. Petit, Mem. de l'acad.
extent*; or entirely wanting†; it is not less uncommon to see it opening into the urethra‡, into the bladder§, vagina¶, or externally, forming an unnatural anus. It is from the latter circumstance that Litre¶¶, Callisen, &c. have proposed to establish an artificial anus, in the iliac or lumbar region, in children born with an imperforate rectum; a practice which has been successfully employed by Professor Dubois and M. Duret of Brest.

Such are the numerous parts which enter into the composition of the perinaeum in man, and which we are now to examine in their order of superposition, laying aside those varieties in thickness and transverse dimensions which they too frequently present, and which are such, that M. Dupuytren** has found, in twenty three subjects, for extremes, between the two tubera ischiī, two inches and three inches and a half; between the neck of the bladder and the skin of the perinaeum, from one inch some lines to four inches. We ourselves have taken these measurements upon forty dead bodies, and the results have been the same with respect to thickness; only, in relation to the separation of the ischia, we have found from one inch and three quarters to four inches.

Upon the median line and before the anus we find; 1st. the skin, with its raphé, of pretty great thickness; 2nd. the subcutaneous layer of a reddish white, sometimes putting on the appearance of a muscular membrane, of considerable thickness, and including veinous and arterial twigs; 3rd. the superficial lamina of the perineal aponeurosis, and the anterior extremity of the sphincter ani muscle; 4th. the accelerator urinæ and transversi perinæi muscles, and branches of the artery of the bulb; 5th. the bulb of the urethra enveloped in

* Flajani, osservazioni di cirurgia, etc.
‡ Van Swieten, Morgagni, Haesbert, de Jussieu.
§ Schultz, Schenkius. || Ruysch, Binninger, Wagner.
¶ Litre, Petit, Méry, Mem. de l'acad. des Scien. 1709-10.
** Thèse de Concours, 1812.
its fibrous tunic, then the recto-bulbar hollow; 6th. the bulbous and membranous portions of the urethra; the former below the deep-seated lamina of the perineal aponeurosis, the second principally above it; 7th. the aponeurosis itself perforated by the excretory canal for the urine, and continuous with the sub-pubic ligament; 8th. the prostate and prostatic portion of the urethra, in which we find the ejaculator canals, the excretory ducts of the prostate and the verumontanum.

In proceeding from the coccyx in order to arrive at the bladder, we meet with, 1st. the skin, of considerable thickness behind the anus, very thin and wrinkled around this aperture; 2nd. the superficial cellular layer, thicker near the coccyx, very thin upon the sphincter; 3rd. the coccygeal prolongation of the external sphincter muscle; this muscle itself; 4th. a pretty thick cellulo-adipose layer, in which some branches of the external hæmorrhoidal artery ramify; 5th. the coccygæus muscle; 6th. the posterior wall of the rectum; 7th. the cavity of this intestine; 8th. its anterior paries; 9th. the recto-vesical cellular layer, which encloses the venous plexus of the prostate, the vasa deferentia, the vesiculae seminales and the fat upon the sides; whilst, upon the median line, it is compact and almost aponeurotic; 10th. the posterior border of the prostate, and the bas-fond of the bladder.

Laterally and anteriorly we find; 1st. the skin, a little thinner than upon the median line and most frequently corrugated; 2nd. the sub-cutaneous layer, in which the veins, nerves, and superficial artery of the perinæum creep, and which often includes a large quantity of fat; 3rd. the superficial aponeurotic lamina of the perinæum; the ischio-bulbar triangle; the accelerator urinæ and transversalis perinæi muscles; the artery of the bulb; 4th. the corpus cavernosum, the deep-seated aponeurosis of the perinæum, including between its laminae the deep branch of the pudic artery; 5th. the cellular tissue and vessels; 6th. the levator ani muscle; the lateral portions of the neck of the bladder; 7th. the rectovesical aponeurosis.
In the anal portion we observe successively: 1st. the integuments, thick and dense upon the sides where they approximate the breech; 2nd. lamellated, filamentous and adipose cellular tissue in great abundance, filling the whole of the ischio-rectal excavation, and in which the external haemorrhoidal artery and nerve ramify, as well as veins in considerable numbers; 3rd. the ischio-rectal aponeurosis; 4th. the levator ani muscle, internally; the side of the rectum and the pelvic aponeurosis; 5th. the trunk of the pudic artery, accompanied by the nerve and veins of the same name; the obturator muscle externally, and also the pelvic aponeurosis.

Art. II. An Account of a Case in which Laudanum was extracted from the Stomach by means of Read's Apparatus. To which is added, a Description of that Instrument, with Directions for its Use. By Samuel W. Moore, M. D. one of the Physicians of the New-York Hospital.

In the month of July 1826, I was requested to visit John Hudson, who, I was informed, had taken laudanum. His wife, it appeared, on returning home after an absence of some hours, had found him lying on the bed in a state of complete insensibility, from which she could not succeed in rousing him.

In this condition I found him. Near him was a cup, which I was satisfied, on examination, had contained laudanum. I had him removed from the bed to a chair, where he was supported by assistants, and in this situation cold affusion was liberally applied for some minutes, by which means he was so far roused as to be able to swallow a solution of about one drachm of sulphate of zinc: but this produced no effect. I then determined to lose no more time in such fruitless efforts, but to employ at once Read's Stomach Pump. The patient living near my own house, the instrument was procured in a few minutes, and I proceeded immediately to use it.

The oesophagus tube was introduced into the stomach without the least difficulty, as the state of the patient prevented him from offering any resistance to that operation, and the
loss of two upper front teeth obviated the necessity of employing any guard in the mouth to protect the tube from injury by the teeth.

After the tube was introduced, warm water was alternately injected and pumped out again, repeating the operation several times, until more than half a gallon had been thrown in and extracted. In this way the stomach was in a very few minutes perfectly cleansed, and the poor man was thus rescued from a state which would otherwise, I am persuaded, have soon terminated in death, as there appeared to be no chance of affording him relief by any other means. The effect of the laudanum did not immediately disappear, but inclination to sleep continued for some hours afterwards. The next morning, when the man was perfectly well, he appeared to be truly grateful for the services rendered him; and he then confessed to me, that in a fit of despair, with the intention of destroying himself, he had procured an ounce of laudanum, the whole of which he had taken.

Some time since, I published the case of a woman who had taken laudanum, and for whose relief I had employed the stop-cock syringe, generally known as "Juke's Syringe." I am pleased now to give my testimony in favour of Read's instrument, which I consider not only superior to Juke's, but indeed to all others with which I am acquainted, that have been either employed or recommended for the same purpose.

As I have reason to believe that Read's apparatus is not generally known to the profession in our country, I hope I may render an acceptable service by giving a description of it, and stating some of the advantages it possesses over other may instruments which have been recommended for extracting poison from the stomach.

Read's apparatus consists, in the first place, of a small syringe, or rather forcing pump, which is made either of silver or brass, more commonly the latter. This is six inches long, exclusive of the handle of the piston rod. The cylinder is less than an inch in diameter, and will not contain more than ten or twelve drachms of fluid; but the piston, which only has a stroke of about four inches, may be worked so
quickly, and with such facility, that three pints of fluid may be easily passed through the instrument in every minute.

Below the cylinder, the pump diminishes in size to an opening at the extremity half an inch in diameter: this forms a valve chamber, furnished with a bullet valve. From the upper part of this chamber projects obliquely upwards, a lateral branch pipe, an inch and a half long, containing another valve similar to the first. When the instrument is kept in a perpendicular direction, or but little inclined, both these valves remain closed, except during the action of the piston, which, in ascending, opens the lower valve, through which the fluid is admitted, and in descending, opens the lateral valve, through which it is propelled. These valves require no care nor attention from the operator, but always act simply by the motion of the piston, which gives to this instrument a decided advantage over all other syringes which have been employed for the same purpose, as the best of them require constant attention to close one communication with the cylinder and open the other, at each stroke of the piston.

Attached to the cap, which screws on the top of the cylinder, is a small packing box, in which the piston rod works; and on the side of this cap is an aperture, which gives free ingress and egress to the atmospheric air, thus facilitating the motion of the piston. The remainder of the apparatus consists of two flexible tubes, about half an inch in diameter, the one sixteen inches, and the other two feet long. The short tube is always used, to whatever purpose the instrument may be applied. One end of this tube is mounted with a brass joint and screw, to connect it with the syringe by a screw on the short lateral pipe above-mentioned. On the other end is a brass socket, exactly of the size with the opening at the lower end of the syringe, as they are both intended to receive the same parts of the apparatus.

The other, which is called the œsophagus tube, has the end which is to be introduced into the stomach somewhat enlarged, closed, and rounded at the extremity; near which are two lateral apertures. The other end of this tube has on it a brass joint, which fits equally well both into the end of the syringe
and into the socket on the other flexible tube. In using the instrument as a stomach pump, a few simple directions only are required. The patient is to be placed in a proper position for the introduction of the oesophagus tube, by throwing the head backwards, until the mouth is nearly in a right line with the throat; then, having previously oiled the oesophagus tube, it is to be carefully introduced into the stomach, where it must remain undisturbed until the operation of injecting and extracting is completed. The tube is not to be connected with the pump until after its introduction into the stomach. In order to guard the tube from injury, the teeth are to be kept apart by a wooden guard placed between them, which is secured in its place by tapes, attached to the ends, and tied behind the head. This guard may either have a hole in the centre, through which the tube can pass, or a notch in the side, in which it may be lodged securely. As it is generally well to dilute the poison in the stomach before attempting to extract it, warm water is to be thrown into the stomach by connecting the oesophagus tube with the other tube, by means of the brass joint on one tube, which is received into the socket on the other; then plunging the lower end of the syringe into the fluid to be injected, and holding the instrument nearly perpendicular, any quantity required may be thrown into the stomach, simply by working the piston. When this is done, and it is required to reverse the action of the instrument, the end of the oesophagus tube is to be detached from the other tube, and inserted into the opening at the lower end of the pump, which can easily be done in a second, without disturbing the tube from its position in the stomach; then, on renewing the same action of the piston, the contents of the stomach are drawn up through the oesophagus tube, and be received in a basin held at the open end of the other tube.

The merit of Read's instrument, however, does not alone consist in its being the best stomach pump which has been invented, but as an enema apparatus also, it is so decidedly superior to all others in use, that if the instrument were adapted to no other purpose, I think it would be invaluable, and I
doubt whether any other would be employed where this was known, and could be procured.

This instrument, so valuable as an enema apparatus, is sometimes put up separately for that purpose. This comprises the syringe and the short flexible tube, with several ivory rectum pipes of different forms and sizes: these all fit into the socket on the flexible tube. One of these pipes is so constructed as to fit into the socket at right angles with the tube. This renders the instrument exceedingly convenient for self-injection. As there are many persons who are obliged to have frequent recourse to this mode of relieving the bowels, these, after having been accustomed to employ the clumsy and cumbersome machines which have been heretofore used for this purpose, will esteem, as no small improvement, the introduction of this neat and convenient, apparatus, which can be used without trouble at any time in a few minutes; and is so portable, that it may be carried in the pocket; and so constructed, that at a single operation, by continuing the action of the pump, any quantity of fluid which the bowels are capable of containing, may be injected without removing the instrument. In short, so well adapted is the apparatus in every respect to this purpose, that I am satisfied when it shall become generally known, few families, and no medical men, will be willingly without it.

The ingenious inventor of this pump has adapted to it several other instruments, whereby it is made applicable to a variety of purposes: cupping and breast glasses; a tobacco fumigator; and lately, an apparatus for facilitating the transfusion of blood, by means of which the danger of injecting air into the veins is said to be avoided. But of more importance than these is the catheter, by which the bladder may be injected, or its contents drawn off. For this purpose it is used in St. Thomas's Hospital, as we learn from a valuable hospital report, published in a late number of Johnson's Review; and the reporter states, that "it is admirably adapted to the purpose."

I know that Read's Syringe has received the approbation of some of the first professional men in London. I need only
mention the names of Sir Astley Cooper, Mr. Abernethy, and Dr. James Johnson. Sir Astley, in one of his lectures, as reported in the Lancet, when speaking of this instrument for evacuating the stomach, remarks, that “it affords the best means of saving persons, who would otherwise perish under the influence of opium.” He mentions a case, which occurred before he was acquainted with this instrument, of a young lady who had taken opium, where he observes, “Every means which I could employ for the purpose of producing vomiting, proved completely unavailing.”—“I sat hour after hour by the side of this young lady, watching her progress to dissolution, without being in the least able to prevent it. If, however, I had been acquainted with the instrument which has been since invented, I should have used it with the probability of success.”

From some years’ experience of the utility of this valuable instrument, I have not hesitated thus highly to recommend it; and if, by so doing, I should succeed in bringing it into more general notice in this country, I shall feel satisfied that the time I have spent in preparing this article has not been unprofitably employed.

Art. III. Observations on the Use of the Datura Stramonium in Chronic Rheumatism, Neuralgia, &c. &c.; and on an Epidemic Fever which prevailed in parts of Holland, in 1826. In a Letter to Jeremiah Van Rensselaer, M. D. of New-York, by the Chevalier Joseph Romain Louis de Kirckhoff, M. D. late Physician to the Military Hospitals; Honorary Vice-President of the Mineralogical Society of Jena; and Associate of most of the Literary and Scientific Academies and Societies of Europe.

Anvers, 23d April, 1827.

I have had the honour of communicating to you, in one of my preceding letters, the fact that for several years I have been employing, with the greatest success, the datura stramonium in the treatment of chronic rheumatism. I told you that whilst I was attached to the army, I had especially numerous opportunities of observing and treating, in the hospitals entrusted to my care, patients suffering under old rheumatismal affections;
and that of all the remedies which I had employed to combat these disorders, I had found none so efficacious as the datura stramonium, a plant very common in all Europe, and to which Storck had been, in a certain measure, the first to call the attention of practitioners. You are aware, that after this physician, this plant has been much recommended in mania, melancholy, epilepsy, and asthma; and when these affections depend essentially on an excess of nervous irritability, the administration of the datura stramonium is strongly indicated, and produces good effects. I could cite several cases which I have collected on this point, and which confirm this assertion;—but I do not know that any physician, before me, has recommended it in the treatment of chronic rheumatism.

I believe I have informed you, that I administer the datura stramonium, internally, under the form of an extract prepared from the leaves (extractum foliorum daturae stramonii), commencing with one, or two grains, every twenty-four hours, (a dose which I augment daily and gradually, until it produces vertigo, dimness or difficulty of sight, dryness in the throat, and dilatation of the pupil); externally, in the form of a cataplasm composed of the leaves, applied to the painful parts, or I cause them to be lightly rubbed with the tincture of stramonium.

I have collected, within a couple of years, several very interesting observations on the therapeutical use of the datura stramonium in the treatment of neuralgia. I have cured, as by enchantment, several neuralgic cases, frontal and maxillary, by the application of cataplasms, or by the tincture of stramonium in frictions. I shall confine myself to relating a single case, which will suffice to induce practitioners to employ this remedy against so powerful an affection. A lady, distinguished by her birth and her fortune, suffered for eight or nine months the most acute pains, caused by a maxillary neuralgia, which seemed to proceed from the circumstance of her having had extracted two molar teeth. She was evidently in a decline, and despaired of a cure, after having been treated by a great number of physicians, and having employed a host of remedies without the least benefit. She had decided upon
having performed a section of the nerve, an operation which unfortunately does not always succeed. In this painful condition she came to consult me. I had recourse to frictions of the tincture of the datura stramonium (tinct. folior. dat. stramonii), recommending her to rub the cheek therewith ten or fifteen times a day. From the first applications she experienced relief, and the amelioration was more and more evident, so that in from five to six days this lady perfectly recovered.

You have undoubtedly heard mention made of an epidemic which first developed itself, in the month of July last year, in the provinces of Friesland, Groningen, and North Holland, and which continued to commit its ravages until the month of February in the present year. I think it will be agreeable to you to receive some information of this disease, which has destroyed so many victims. It must be observed, that the provinces I have just named are of a marshy character, and the soil is, for the greatest part, turfy. During the autumn of each year, there occur, especially in low places, intermittent fevers, which are endemic, and very extensively prevalent where the summer has been very warm.

Much absurdity has been uttered with respect to this epidemic disease. Some have even gone so far as to entitle it contagious. In my opinion, it has been the product of marshy exhalations, invested with an extraordinary form by the excessive heats which we experienced the last summer. This heat, indirectly enfeebling the system, has disposed it, in a peculiar degree to receive the deleterious action of the marshy emanations; so that, according to my views, the heat has been the predisposing, and the marsh miasms the occasional causes of the disease; which, I have no doubt, has not been other than the endemic intermittent and remittent fevers of Friesland and North Holland, &c., occasioned by the marshy soil, and which, by the intensity and long duration of the morbific causes, have been the more general and severe, and very frequently fatal.

I will avail myself of this opportunity to inform you that I employ, with marked success, the prussiate of iron in the treat-
ment of epilepsy, when it does not result from an organic lesion. I have obtained from it, in some instances, astonishing and unexpected effects. I have effected complete cures in persons who had been attacked with epilepsy for a number of years. My method of administering the prussiate of iron (prussias ferri) is to commence with very small doses, and to augment it gradually to six or eight grains daily; and if the patient is of a sanguine habit, I precede the use of the prussiate by one or two bleedings, and by the application of leeches to the temples.

If you think the preceding observations possess any interest for the physicians of your place, I beg you to insert them in the excellent Journal of Medicine of your city.

I beg you to accept of the reiterated expressions of my high esteem, &c. &c.

Art. IV. Notice of an Epidemic which prevailed in several districts of the Island of Java in the years 1825 and 1826. In a letter addressed to Jeremiah Van Rensselaer, M. D. of New-York. By the Chevalier Kirckhoff, M. D. of Anvers.

Nothing exposes to view so effectually the frailty of our existence as an epidemic disease of a fatal character; and frequently, notwithstanding all our investigations, we do not possess ourselves of a knowledge of the causes of the evil. To collect the materials capable of assisting in the composition of the history of an epidemic, which has devastated whole provinces, is to render essential benefit to the art of healing, and consequently to suffering humanity.

During the months of June, July, and August 1824 and 1825, a fever of a severe type prevailed under the epidemic form in several districts of the Island of Java, especially in those of Batavia, of Cheriban, of Preanger, and of Kra-wang. In this last province more than twenty-four thousand inhabitants were seized with it. Doctor Blume, Commissary of health for Netherlandish-India, observed this disease un-
under all its forms, and has gathered together his observations thereon, which are highly interesting, in a report which this learned physician has addressed to Governor-General Vander Capellen, and which he has had the kindness to communicate to me.

That which appears to me to merit particular attention from physicians, is the perfect resemblance between this disease and that which has recently carried desolation in its progress through some provinces of Holland, and which, I may observe by the way, was not produced except by the excessive heats of the summer of 1826, and the marshy exhalations which they developed in an extraordinary degree. I dare boldly advance it, notwithstanding the singular opinion which a distinguished Dutch physician has just published on the etiology of the epidemic disease of Holland, which he considers to be contagious. Several letters written to me respecting this disease, by well educated and experienced physicians, who have seen and treated it from the beginning of its appearance until the end, confirm me in the opinion that it was no other than the intermittent and remittent fevers, which, by cause of the marshy soil, are endemic in Friesland, North Holland, &c.; and which, during the last year, were more general, more severe, and very frequently fatal, on account of the intensity and long duration of the occasional causes.

The epidemic disease which forms the subject of this notice, appears to have been the product of intense heats and marshy emanations, like that which lately exercised such fatal ravages in Groningen, Sneek, Hoorn, &c. It made its appearance chiefly in low and marshy situations. M. Blume regards it as a bilious fever, and does not believe it capable of communicating itself by contagion. He thinks that the atmospheric influence has powerfully contributed to the origin and development of the disease.

It presented almost always symptoms of gastric affection, and of congestion in the viscera. According to M. Blume, the congestions were of a passive character.
This was the progress of the disease in ordinary cases. It announced itself by a great lassitude, a general feeling of uneasiness, by vertigos, pains in the head, especially under the orbits, with a sensation of pressure, anorexia, gastric embarrassment well marked, often by yellow colour of the skin, &c. These symptoms commonly made their appearance for several days before the fever was developed. This manifested its presence by a slight chill, followed by an acrid sense of heat in the skin, an increase of the pain in the head, a desire to vomit, or rather powerful bilious discharges upwards and downwards, connected too with spasmodic affections, which were renewed during each exacerbation, &c. The remissions of the fever were very short, and, during the paroxysms, the heat, which was very great, was most evident in the epigastric region and in the forehead, and continued undiminished and without perspiration. The pulse, which at the commencement of the disease was tense and accelerated, became more and more weak and irregular. The strength of the patient sunk with so much rapidity, that frequently after the first attack of the fever he could no longer hold himself on his legs.

The symptoms were aggravated by each renewed paroxysm, if the disease was not properly combatted. To the symptoms already mentioned, must be added delirium, which usually accompanied the fever. Most frequently life was extinguished by convulsions, and death was preceded by colliquative diarrhoeas and an extreme prostration of all the powers.

In general, the disease offered, according to M. Blume, a nervous-asthenic character. Although the fever, in its onset, assumed the remittent type, it was not infrequent for it to become intermittent, or rather it would be made to undergo this change by an appropriate treatment.

The treatment, followed and advised by M. Blume, was crowned with happy results. To oppose the condition of gastricity he had recourse to minoratives; that is to say, during the first period of the disease, and whilst their employment was not contra-indicated by the violent symptoms, such
as spasms, great prostration of strength, diarrhoea, &c.—Small doses of sulphate of soda, or of sulphate of magnesia, produced good effects in the commencement of the disease; but an eccoprotic medicine, which was employed with greater security, was the young leaves of the Cassia alata (Daun kupon kimanila) in decoction.

With respect to emetics, their administration was less proper. They frequently provoked powerful diarrhoeas. Bleedings were hurtful, as also the prolonged use of mercurials, which some physicians have so blindly cried up in the treatment of the diseases that are peculiar to the burning countries of the torrid zone.

In the second period, when the disease had already reached its acme, and the vital forces were much weakened, there was no room for temporizing medicine, (medicine expectante.) It became necessary to strengthen. M. Blume obtained excellent effects from the bark of the Cedrela Febrifuga, of which the medicinal properties would seem to be absolutely the same as those of the quinquina. It was administered in decoction, in the proportion of an ounce and a half of this bark, coarsely powdered, to two pints of water, boiled down one half. To increase the efficacy of this decoction, there was infused in it, for some minutes, a half ounce to six drams of Alyxia Reinwardtii, (Poeloesarie) of which the tonic action is more diffusible. Of this decoction there were taken, every hour, two spoonsful.

In the cases where the prostration of forces was universal and strongly marked, and the employment of volatile or diffusible stimulants was more indicated, infusions of the Chlo- ranthus inconspicuus, (Krast-teolany,) and of the excellent valerian of Java, were beneficially employed.

Having once arrested the fever, it was essentially necessary to continue for some time the use of the Cedrela febrifuga, or of quinquina, in order to prevent relapses. M. Blume has observed that this fever must be treated, for the most part, like malignant intermittent, and that it was of great importance to employ means proper to oppose the return of new paroxysms. With this view, the Cedrela febrifuga might be mainly
relied on, a plant with which the estimable Dutch naturalist has recently enriched the materia medica. He assures us, in the fourth book of his flora of Java, that he has employed with the greatest success this bark, eminently tonic, in malignant intermittent and remittent fevers.

Art. V. Account of a Case of Disease of the Lower Jaw and Face. By John Augustine Smith, M.D. Professor of Anatomy and Physiology in the University of the State of New-York.

On Thursday, the 19th day of July, I was requested by Doctors Dayton and Hart, to visit, in conjunction with them, Dr. Chambers, the proprietor of the celebrated remedy for intemperance. On inquiry, I was informed, that about twelve days before that time he had been attacked with a most excruciating pain in the lower jaw of the right side, near its middle: that for ten days there had been no fever, no soreness, and no swelling; but that within the last two days, the part had assumed, externally, the appearance of a common gumboil. Various remedies had been applied, internal and external, local and general, in the hope of obtaining some relief from the torture which had been experienced, but without success. With the same view, and with the same result, a tooth, which it was supposed might be the cause of the mischief, was removed just before I entered the room. The extraction gave no pain—perhaps it produced no sensation—the patient sometimes making the one statement, and sometimes the other. I found him with his face slightly swollen, and his mouth ulcerated internally, but whether from the disease, or from the acrid remedies which had been employed, I could not tell. He was delirious, and spitting what appeared to be a solution of grumous blood, without any disagreeable odour. His pulse was moderate, and his skin cool. As he had been leached, piked, purged, and blistered, and his mouth was much inflamed by scarifications of the gums and irritating applications, I recommended topical remedies of a soothing character, and the administration of opium. This plan was
followed, and he took 60 drops of the black drop, divided into two equal portions. Nothing at first could appear more successful than this mode of treatment. He passed a good night, arose in the morning, put on his clothes, and said he should go out and attend to his business. In the afternoon, however, the disease returned with great violence; and at 9 o'clock I was requested by the same gentlemen again to visit him, in conjunction with my colleague, Dr. Joseph M. Smith. We found him in a state of furious delirium, with an aggravation of all his symptoms, and making cold applications to his face. As he had, in the course of the afternoon, taken 30 drops of the black drop, it was impossible to decide how far the present symptoms were to be ascribed to that circumstance or to the disease. A continuance of the mild lotion to his mouth was advised, and the application of a large milk and bread poultice to his face was recommended, as the inflammation had now extended to the right temple and eye. Before any thing further was done, it was determined to wait until the effects of the opium should pass off.

The next morning the symptoms were found to be equally urgent. He was now directed to be cupped largely; a dose of calomel and jalap was prescribed, and a continuation of the poultice was ordered. But no relief was obtained, and the next day he expired. During the last thirty-six hours, the inflammation became erysipelatous in appearance, producing a striking resemblance between Dr. C. and the lamented Dr. Dana. The next morning I examined the body. Upon laying bare the lower jaw, I found it dead, and denuded of its periosteum from the root of the coronoid process to the posterior bicuspid tooth. Points of incipient suppuration were discovered in various places, and the masseter muscle was converted into a substance resembling hepatized and partially suppurated lung. Pus occupied the situation of the submaxillary gland, and all the contiguous parts were greatly diseased. The effused fluids were so acrid as to act on my instruments like an acid. The brain it was thought unnecessary to inspect.
The preceding case is, I think, worthy of record for its singularity; but I confess I do not see how a similar affection can be detected with any certainty in the first instance, or cured after its nature is ascertained. That the corrosive fluids of which I have spoken, were the cause of the patient's suffering, is probable enough; but that they should not have produced, at an earlier period, the ordinary local effects of inflammation, appears to me extraordinary. The case consequently, I think, must be considered as adding one to the many anomalies which the medical profession daily presents.

Art. VI. General Views of the formation of Phosphuretted Hydrogen. By Lewis C. Beck, M.D. Professor of Chemistry, &c. in the Vermont Academy of Medicine.

In the few observations which I shall make upon the interesting compound forming the subject of this article, I shall carefully examine the phenomena which attend its formation, and then deduce from them some general principles, which, although they may not be new, have not occurred to me in the course of my reading.

Phosphuretted hydrogen, or the hydroguret of phosphorus, is a peculiar gaseous compound, consisting of one proportional of phosphorus, and one proportional of hydrogen. It inflames spontaneously upon the contact of the atmosphere, burning with a bright flash.

For the production of this gas, it appears to be necessary that phosphorus should be presented to nascent hydrogen. The hydrogen is almost universally obtained from the decomposition of water, although analogy would induce us to believe that it might also be derived from that of sugar, and of other vegetable products.

The elements of water have a powerful attraction for each other; we are acquainted with but few substances which can effect their separation. The splendid discoveries of Sir Humphrey Davy made us acquainted with a class of bodies which possess this property in an eminent degree: I mean the me-
tallic bases of the alkalies and alkaline earths, which decompose water with great rapidity, uniting with its oxygen and liberating its hydrogen in the form of gas. These bodies, therefore, are admirably calculated for the present purpose. Some of these, moreover, unite with phosphorus, forming definite compounds, called phosphurets. And it is important to state, that these phosphurets rapidly decompose water, and evolve phosphuretted hydrogen. Such is the fact with regard to the phosphurets of potassium, sodium, calcium, &c. formed by heating these metals with phosphorus out of contact of air.

Let us now examine the circumstances which attend the more common methods of obtaining this gas.

1. One of the processes adopted in the laboratory, is to take phosphuret of lime, as it is commonly called, or phosphuret of calcium more properly, and to throw it into warm water; bubbles arise and inflame upon contact of air, and they are phosphuretted hydrogen. Now in this case the explanation is very easy. Phosphorus cannot decompose water, and it must therefore be combined with a substance which has the power of doing this. Lime has not; calcium has. Whatever of phosphuretted hydrogen, therefore, is produced in this way, must be the result of the action of phosphuret of calcium, and not of lime.

2. Another method is, to put some pieces of phosphorus into a retort filled with a solution of caustic potash, and to apply heat. In this case, the addition of heat enables the phosphorus to decompose the potash; a portion of it probably unites with the oxygen of the alkali, forming an acid, and another portion with its metallic base, forming a phosphuret of potassium. This last decomposing the water, furnishes the phosphuretted hydrogen.

3. Instead of caustic potash, the carbonate of potash and quicklime are sometimes employed in combination with phosphorus, with the same results; except that the evolution of phosphuretted hydrogen is not so rapid as in the former cases. The rationale is, in effect, the same as before. The carbonic acid of the carbonate of potash unites with the lime, and then the potash is acted upon by the phosphorus in the manner above explained.
If the above explanations be correct, we infer that for the production of phosphuretted hydrogen, it is only necessary to employ phosphorus and some metal, which metal, per se, possesses the property of decomposing water.

We can, therefore, obtain this gas:

1. From the phosphurets of all the alkaline metals; as potassium, sodium, calcium, &c.—by the mere addition of water.

2. From a combination of phosphorus and the oxides of these metals; as potash, soda, lime, &c.—by the application of a sufficient heat to enable the phosphorus to effect a decomposition of these oxides.

3. From phosphorus, and those metals which are usually employed in procuring hydrogen gas; as iron, zinc, &c. But as these metals do not decompose water with much rapidity, without the presence of some dilute acid, this must be added in the present case, and the process conducted in all respects as when we wish to obtain hydrogen alone, by means of these metals. The use of the acid in both cases is the same.

Such are the general views which I have deduced concerning the formation of phosphuretted hydrogen; which I believe the most minute examination will prove to be founded in truth.*


Case of Worms.

On the 9th of March, 1822, I was requested to prescribe for a little negro child, aged two years, who had previously discharged several lumbrici from the stomach and bowels; and in whose case were most of the symptoms indicative of worms, viz. variable appetite, pain of the belly, fetid breath, grinding of the teeth when asleep, hardness and tumefaction of the abdomen, perturbed sleep, pricking of the nose, cough, and evening exacerbations of fever. He was immediately

put on a course of purgative and anthelmintic medicines, and discharged, at different times, upwards of an hundred round worms. But notwithstanding the removal of this immense number, and the most persevering use of the various medicines directed in such cases, his health gradually declined, his appetite became more variable, the skin assumed a pale ashy hue, (such as is presented in cachexia Africana,) abdominal pain was augmented, cough, fever and restlessness increased, and ultimately great debility with emaciation and oedema supervened. About three weeks previous to the fatal termination of the case, the cough suddenly assumed a most distressing character, the child screamed as if in the greatest agony, and in a few minutes was almost lifeless, the extremities cold, respiration feebly performed, pulsation in the radial and temporal arteries nearly gone, the head thrown back and eyes half closed. In this state he remained for half an hour although the most diffusible stimulants were exhibited, aided by the warm bath and friction. The above symptoms occurred at intervals of one and two and three days until the death of the child, which took place on the 21st of April. Having a great desire to ascertain the real cause of death, and to find, if possible, a clue to unravel the anomalous symptoms of this case, I obtained permission of the master to open the body. On cutting into the abdomen an immense number of round worms, varying in length from two and a half to six inches, was discovered in the stomach and intestines. The right lobe of the liver was then elevated, and the head of a worm was seen projecting from it, which, by the aid of a pair of forceps, was extracted. I then introduced a probe into the sinus from whence the worm had been taken, and following it with a scalpel, soon discovered eleven more, which were in like manner removed; these were partly in the sinus and partly in the gall bladder; the latter was nearly destitute of bile. On examining the parietes of the abdomen opposite the mouth of the sinus, where the head of the first worm had been seen, a small spot was perceived resembling an ecchymosis, and had been produced evidently by the efforts of the worm to penetrate the part. A small indu-
rated circle surrounded the mouth of the sinus, and was tinged with cystic bile, and on the upper and convex part of the liver were two small abscesses. As no preternatural communication between the gall bladder and duodenum could be found, the worms must have gradually enlarged the ductus choledochus; indeed this is the only way by which we can account for their presence in the gall bladder, and we know this duct is capable of considerable dilatation by the passage of biliary calculi. This case bears some analogy to the one recorded by Dr. Macauley, of Baltimore, in the Medical Recorder. Dr. M.'s patient was advanced in life, in consequence of which she was perhaps the better enabled to bear up under the great degree of irritation and debility arising from the suppurative process induced by the efforts of the worms to disengage themselves from the abdomen. In his patient the abdominal parietes ulcerated, a number of round worms were discharged, the part gradually healed, and she recovered; but the liver was not disturbed in function except in a secondary manner from irritative fever, while in my patient functional disorder of the liver was induced at an early period by the fever which supervened, and at a more remote period disorganization commenced and was kept up until death. The secretion of bile must have been diminished, and even the small portion secreted greatly obstructed in its passage from the gall bladder to the intestine, and hence the variable appetite, hence the frequent paroxysms of pain, and hence too the great and rapid emaciation. This case and Dr. Macauley's go to prove, that independent of the fever and other bad consequences resulting from the accumulation of worms in the human system, they may become the immediate cause of death by inducing lesions in organs important to life.

REMARKS ON SALIVA, AND THE BENEFIT DERIVED FROM SOLID FOOD IN IRREGULAR FEVER.

"Animal food affords that rich aliment in a state nearly prepared for supplying the deficiencies of the living system.
On the contrary vegetable food has a smaller proportion of nutritious matter in it, and requires for its separation a more complicated and tedious process of **maceration, trituration, and digestion.**”

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Is the saliva a necessary and important fluid in the process of digestion? We are induced to believe it is, first, from the indigestion, pallidity of countenance, and leanness of the body induced in those who use tobacco to excess, by which a large portion of saliva is wasted; secondly, from the number of salivary glands and the amount of saliva secreted;* and thirdly, from the fact that nature is always simple in her operations, and never performs by numerous organs, or a complicated process, that which she can accomplish by simple means. We admit that man is an omnivorous animal, and that he can subsist on vegetables, but contend that solid food is the most wholesome and appropriate diet for him, and that when properly masticated and mixed with saliva, it is more digestible than liquid. A great variety of articles have been selected for diet by the inhabitants of different countries, viz. potatoes, dates, chestnuts, gum senegal,† fish, &c.‡ But these different articles are of a solid nature, and in their mastication must elicit and become incorporated with a considerable portion of saliva. No class of men enjoy so much health as the Indians, the Dutch, and the Africans of this country. The former subsist on fish, scorched corn, and the flesh of wild animals. The Dutch principally on milk, butter, bread and cheese; and the Africans on corn, bread, and meat. Most instances of longevity in this country are found among the above classes, and we ascribe their health and longevity, first, to the simplicity of diet; secondly, to its nutritive properties; and lastly, to its admixture with a due portion of

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* The salivary glands, says, Nack, discharge a pint of saliva in twelve hours.—*Vide Bleamahack’s Physiology.*

† Some of the Moorish tribes in Africa.

‡ The inhabitants of Kamschatka.
saliva. Indeed it would seem that in every period of life nature has made provision for the excitement of the salivary glands, and the discharge of this fluid. Milk is the common and appropriate diet of the infant, yet the exertion of the mouth in sucking must necessarily cause a considerable discharge of this fluid, and the milk is coagulated in the stomach before it undergoes digestion; and this appears to be a strong argument in support of the opinion that solid articles of diet are most conducive to health and strength, or why has nature provided for the coagulation of milk in the delicate stomach of the infant?

From these facts, are we not warranted in the conclusion, that solid articles of diet are best adapted to the wants of the system in health, and that certain conditions of the stomach in disease imperiously demand their exhibition. We wish not to be misunderstood. We will not advocate the necessity of exhibiting solid articles of diet in fevers of a decidedly phlogistic character, for in them our object is to reduce the system by every means of depletion in our power; and vegetable diet, as rice, sago, arrow-root, &c. being less stimulant and nutritious, are most appropriate. But we assert that patients, when convalescent from fever, are frequently, during the continuance of irregular fever, often cruelly and improperly debarred from articles of diet, which, used in moderation, would not be detrimental, but highly serviceable. We have sometime since been induced to believe that in many cases of fever, (when the patient is sensible) the stomach, more accurately than the physician, can point out the proper articles of diet. Do we not frequently see it craving those medicines which are best adapted to the removal of the existing fever? We have often witnessed the strong desire of patients labouring under inflammatory fever for cold water, acidulated drinks, and cool air, but do not recollect to have seen a single case in which they demanded stimulants until the fever had degenerated and assumed a typhoid character, when the inclination for cool liquids generally ceases, and a fondness for stimulants is engendered. If then the stomach so often admonishes us of
the propriety of using this or that particular medicine in fever, by what chain of facts or process of reasoning can we arrive at the conclusion that it is less to be depended on in the selection of diet? We know it is a common opinion, (and to a certain extent perhaps a just one,) among medical men, that in convalescence from fever the stomach, and all the chylopoietic organs, are in a debilitated condition, and therefore solid and stimulating articles of diet would be injurious. This is sometimes the fact, but the injury is frequently to be ascribed more to the manner of eating and the quantity consumed, than to the properties of the article. We have frequently indulged persons recovering from inflammatory fever in the use of meat and other solid food, (always however directing it to be well masticated and mixed with saliva) and have rarely known bad effects to result from the indulgence. In the rage for new discoveries, and the fondness for hypothetical speculation, the subject of diet has been most shamefully neglected by medical men. No remark is more sound and true, than that "man is an imitative creature;" and hence we too often follow the directions and sanction the opinions of our predecessors, without subjecting them to that patient and mature consideration which is so essentially necessary to the establishment of correct principles in medicine. We are too apt to place implicit confidence in the observation of great men; and from this cause, and a reluctance to reason and experiment for ourselves, we permit errors to be perpetuated. Who, before the experiment was made, would not have condemned the use of turpentine in burns, the copaiva in gonorrhoea, and laudanum in the hot stage of intermittents? As soon, however, as antiquated prejudices in relation to these medicines yielded to fact and experiment, they became common and favorite remedies. The country scarcely affords a physician who does not prescribe turpentine in burns; many use the balsam in gonorrhoea; and Dr. Chapman corroborates Lind's recommendation of laudanum in intermittents. And is it more inconsistent with long established opinion, to recommend solid articles of diet in irregular fever, when the strong inclination of the patient indicates their propriety? Is this opinion more at variance with sound reason than that which led to the use
of turpentine to an inflamed surface? We know that inflammations differ; that sedative applications are best adapted to some, stimulant applications to others; and if this be true in relation to diseased surfaces and their remedies, why may it not be true in relation to a diseased stomach and its diet? Whence then the propriety of prescribing the same routine of diet for all patients labouring under the same disease, without regard to their cravings? Do not patients labouring under the same disease often present a remarkable difference in regard to medicine; some retaining with evident advantage a particular drug, while others, with the same symptoms, will reject it? And can this evident difference exist as to medicine and not as to diet? Is it rational to say the same medicines are not always adapted to the same disease in different individuals, but the same articles of diet are? If the same disease in different persons from difference of habit, temperament, age, &c. will create different propensities as to medicines, are we not doing violence to common sense, to deny that the same causes will excite different propensities as to diet? Do we not frequently see patients with irregular fever manifest an inordinate desire for articles of diet which, according to received and long-established opinions, would be improper? But this craving is not more remarkable than the fact, that continued fever will remain for weeks, the patient require frequent bleeding, the skin hot, and yet the tongue be clear and moist. We have seen this in a continued fever, which lasted from seventeen to forty days, the tongue through the whole course of the disease clear and moist. But in regular fever, one of the most common occurrences is a furred tongue with more or less dryness and clamminess of the mouth; and if morbid action can produce so great a diversity of appearance in the tongue and mouth, why may not the same chain of morbid associations impart to the stomach a species of functional derangement which gives to solid and stimulant a decided preference over liquid and light diet? The man, long accustomed to the potation of ardent spirits in excess, at last brings the stomach into such a condition that sudden deprivation of it always endangers and sometimes destroys
Art. VII. Observations on the Modus Operandi, and Effects of Medicines. By Daniel Drake, M. D. late Professor of the Theory and Practice of Medicine in Transylvania University.

But few subjects in the profession involve greater difficulties than the Modus Operandi of Medicines. The effects of almost every medicine are various—the mode of its operation complex and obscure. Were the human body a single molecule, homogeneous in structure and function, the laws of its relations with surrounding objects would be few and easily comprehended. But the reverse of this is true, and hence the inevitable failure of all who have sought to embrace, in a few general propositions, the principles which relate to this subject.

Is must be granted that some of these propositions are, on the whole, correct; as, for instance, that which pronounces...
all medicines to be *alterants*; but this merely declares them active substances in relation to our systems, and leaves us ignorant of the variety of alterations which they can produce, and of the modes of that production, although these are the proper objects of inquiry. As the organs which compose the body have different aptitudes, and are variously acted on by the same agent, we shall find that the medicine which *excites* one function, may *disturb* another, *suspend* a third, and leave a fourth *unaffected*; and as the organs are associated and co-operative, if one be changed in its actions, others will likewise experience change: finally, every substance in nature, exerting upon us an action peculiar to itself, the changes, both primary and secondary, which are wrought out by medicinal agents, are exceedingly numerous. I shall proceed to consider in what way they are brought about.

This inquiry naturally divides itself into two parts:

1. How is it that a medicine applied directly to an organ, changes the mode of its existence?

2. In what manner does this change cause an alteration in the mode of existence of other organs?

With respect to the first, we can only say, that the effects of an external agent upon the functions of an organ, provided it acts neither mechanically nor chemically, are referable to the existence, in the organ, of the properties denominated sensibility and contractility, without one or both of which no phenomenon would follow its application. Beyond this, I presume, our analysis of the subject cannot be carried. A knowledge of the *quomodo* is evidently unattainable. We can only observe and register the feelings and symptoms which follow the contact of the medicine. These declare to us that some medicines *exalt* the sensibility and contractility, others *depress*, and others *pervert* them. The first are called stimulants or excitants, the second sedatives, the third irritants or alterants. But the last may either increase or diminish the vital properties, while they irritate, and hence results a complicated effect. I am aware that some therapeutists deny that external agents ever directly depress the powers and actions, either of the part to which they are
applied, or of those remote from it; and sustain their aver-
ment by saying, that every active substance must necessarily
stimulate; that is, produce increased excitement. This,
however, is assuming what should be proved. The relation
is not between the agent and the excitement; but the agent
and that susceptibility without which it would be inert.—
Now it is just as possible to comprehend that a medicine may
exhaust the susceptibility, as augment or pervert it; and
hence we can as easily conceive of the existence of sedatives,
as stimulants or irritants.

The second part of the inquiry is far more complicated.
When we cast our medicinal agents upon the surface of one
organ, we observe changes in the functions of many others,
and sometimes of the whole. Now how are these changes
effected? I answer that they are brought about in one or
more of three modes.

1. By correspondence of function.
2. By dependence of function.
3. By absorption.

1. Correspondence of function is established and main-
tained by the nervous system. Without this bond of union
and intercourse, all the organs would be like distinct ani-
mals, placed in juxta position, adhering to each other, and
dependent for sustenance upon the same fountain; but unac-
quainted with each others' functions, enjoyments, or suffer-
ings. There would, in fact, be no unity, nor concert, and
of consequence no individuality. It is easy to perceive in
what manner the organs are connected by the nervous sys-
tem; but how that system enables them to hold communion,
and act and re-act on each other, is one of the arcana of life.
Of the fact, however, we are well assured; and with it we
may connect many of the distant effects of our medicinal
agents. Parts that are associated in health sympathize, when
one is excited or tortured by the active substances which
constitute our materia medica. A reference to this principle
is by many considered a sufficient explanation of all that fol-
low upon the administration of a medicine; and to such its
modus operandi appears in an aspect of extreme simplicity.
If, however, the effects of a medicine were in reality propagated through the system by sympathy only, I could not allow to that propagation the simplicity which is claimed for it. When several different organs are disturbed by the application of a medicinal agent to one, it by no means follows that they all sympathize with that one. When disturbance is carried into a second organ, a third may sympathize with it, instead of the first, while a fourth may be agitated by either or all of the preceding; and thus the aggregate or constitutional effect, become the offspring of a complicated process. But this is not the only error of this comprehensive philosophy. Having shown, what no one will deny, that distant organs may be affected sympathetically, they consider it proved that they are affected in no other mode, than which a more obvious error could scarcely be committed. As well might they assert, that because a remote place can be reached over land, we cannot travel to it through the water or the air.

The facts which establish the sympathetic operation of medicines, prove that and nothing more. Another kind of evidence is necessary to demonstrate, that effects produced in a different mode, are not blended with these; and that testimony is wanting. On the other hand, believing that such effects have a real and most important existence, I shall proceed to consider the manner of their production.

2. Dependence of function, although but seldom referred to in explaining the propagation of impressions, either morbid or curative, is manifestly entitled to great attention, both from the pathologist and the therapeutist. Sound health requires reciprocity of action; and the well-being of the whole can only result from the well-being of all the parts. If one of these fail, some other must of course perform its office imperfectly, and when all are in debility and disorder, if one be restored, some other will immediately improve in its condition. Thus, morbid and healthy states of existence are disseminated throughout the system, as irregular and regular movements are propagated through a complex machine, by mutilating or mending any of its parts.
To apply this principle to the modus operandi of medicines, it is only necessary to refer to the influence which the great organs of the body, as, for example, the stomach, the heart, the brain, the liver, and the skin, exercise in its economy. If any one of them falters in its duty, some other—perhaps several—fail in theirs; it being a law of the system, that every organ shall perform a certain part, to enable the rest to perform their offices; and if any one of them is changed in its action, the others, under the requirements of the same law, are changed in theirs. Thus, if an external application invite blood to the surface of the body or repel it, the organs of the interior experience corresponding abstraction or repletion. If the liver is made to secrete more bile, the bowels are stimulated into increased action. If the powers of the heart are augmented, the various organs are injected with greater momentum, and assume a higher tone. Now the effects, of which these may serve as specimens, are undoubtedly blended, in every case, with those which arise from correspondence of function. Thus while an external stimulus promotes cutaneous circulation, and draws from the plethoric organs within their superabundant blood; it imparts to the skin an excitement, which, through the medium of the nervous system, revives the oppressed powers of those organs; and while mercury causes a flow of bile, that stimulates the bowels to a livelier peristaltic action, they feel, sympathetically and beneficially, the higher and healthier function of the liver, which that medicine has produced. Other and more striking examples of the union of correspondence of function and dependence of function, in transmitting the impressions made by curative agents, could be cited, but these are sufficient for illustration.

3. The last mode in which medicines produce an effect in parts remote from that to which we apply them, is by being absorbed into the sanguiferous system, circulated with the blood, and finally eliminated through the excretory organs. The time has passed away, never to return, when this was regarded as the only mode in which a medicine can make itself felt in parts remote from the place to which it is applied; but
that it is one of them, may be regarded as an established truth. I am apprised that there are a few exclusive sympathists, who "cannot conceive of the absorption of medicines," any more than a humoralist of the Boerhaavian school could conceive of their acting without being absorbed; and I feel the full force of the petitio principii, that the living body will not tolerate the absorption of active substances. But what the living body will or will not tolerate, we can only know from experiment and observation; and by these we learn, that active substances thrown upon the mucous membranes, and, under certain circumstances, upon the skin, are absorbed, do circulate, cause disturbance of the functions, and are finally eliminated through some of the excretory outlets of the sanguiferous system: Outlets in which reside the true vires conservatrices naturæ, and which would be far less necessary, if nothing could pass into the system, that might not remain there. It is not my design to exhibit a catalogue of the substances which, taken into the stomach, have been detected in the blood, or in the secreted fluids of the kidneys, lungs or skin. More than twenty might be enumerated, without referring to writers of a period, when experiments in physiology were conducted less rigidly than at the present time.—Indeed, facts of this kind have become so numerous, and are so authentic, that no one can venture to deny them.

It is asserted, however, that none of the curative effects of medicines are attributable to their absorption; but how can this assertion be sustained? When thrown into the blood-vessels in our experiments, they produce striking effects, and does this not favour the opinion, that when absorbed, they must be operative?

But it is said, that before they can be absorbed, they must be assimilated; that is, decomposed, and their ultimate elements united with those of our food into chyle. Here, again, is assertion without proof or even plausibility. If medicines are decomposed, and their ultimate elements become chyle, how can they ever re-appear? If the particles of oxygen, azote, and potassium which, united in certain proportions, constitute nitrate of potash, be once separated and made compo-
nent parts of the chyle and blood, what should induce them, more than any other particles of the same kind, to re-unite in the urine and form nitre?

Further. Several medicines, that appear in the excretions after being swallowed, such as camphor, oil of turpentine, and the balsam of copaiva, are vegetable compounds, the products of vegetative action,—and if decomposed into their elements—oxygen, hydrogen, and carbon—can never be regenerated, but by subjecting those elements a second time to the vegetable chemistry that first combined them.

It has been said that medicines cannot be detected in the serum of the blood, and are, therefore, not absorbed, or have lost their formal state. What I have just said, would seem to be a sufficient reply to this affirmation, but a few remarks may not be amiss:

1. Several medicines, such as the prussiate of potash and carbonate of soda, can be detected in the blood.

2. Many substances mixed with the serum after it has been drawn from the body, cannot be detected by our tests, even when the proportion is greater than it can be by absorption.

3. Substances, when absorbed, do not accumulate in the blood-vessels; but begin to pass out of the system through the lungs, kidneys, skin, and probably the liver, almost as soon as absorption commences; and hence the quantity existing in the blood at any one time, is always small.

4. For the greater number, as for example, most of the native vegetable compounds, we have no certain tests. Nevertheless, it is held by some that the change which medicines undergo in being absorbed, is not one of absolute decomposition, but only such a change as prevents their entering the blood in a formal state. But whether their state be formal or informal, this may be predicated of them—that they are, or are not, essential components of the blood. If the former, they have been decomposed and assimilated, and of course can never be revived—they have been dissolved into nutriment; if the latter, they are foreign bodies—for every thing contained in the sanguiferous system, that is not
blood, is extraneous matter;—and they may therefore be active.

Concerning this state *formal*, and the state *informal*, our information is not so full as could be desired. The subject is rather an obscure one. When carbonate of soda, after its copious administration, is found to impregnate the serum of the blood and the urine, the elements which compose it—oxygen, carbon, and sodium—must exist separately, or united into carbonic acid and soda, or into greater consolidation, so as to constitute the salt in question. It would be interesting to know which of these is the informal state which the vital principle is pleased to tolerate. I should think, on the whole, that this principle would have least difficulty in managing the last. To vulgar observation, the carbonate of soda is less irritating than either of its immediate constituents; and these, again, rather milder than the three simple substances of which they are composed; so that on the whole, until more fully instructed, we may venture to regard the carbonate of soda as the informal state in which carbonate of soda can exist in the blood. In reference to simple bodies, the inquiry is less difficult. When, for example, sulphur enters from the mucous membrane of the stomach, and makes its exit through the surface of the body, it certainly has not the form of an octahedron, in which we find it in the earth; and, therefore, is not in a formal state; but that the atoms of this elementary substance are the same, whether in the earth or in the blood, we are compelled to believe, as long as we consider it an undecomposable body. The changes, only apparent, that simple substances can undergo, are those of composition, not decomposition: They may be disguised, but cannot be destroyed.

We are told, that if we believe in the absorption of one medicine, we should believe that all are thus received; while, with respect to the greater number, there is no evidence of their absorption. We should believe according to the facts. These inform us that some medicinal agents reach the blood, but others may not. Many articles may offend the absorbing vessels, and not be taken up; others may pass out through
the liver, and never reach the vena cava; some may pass off in the lungs, and not arrive at the left side of the heart—others, arriving there, may be rapidly eliminated through the kidneys or the skin: while a few, not stimulating any of the emunctories with energy, may continue for some time to circulate in the system, and even be deposited in its tissue as happens with the preparations of silver. On all these points, every external body in nature is peculiar; and a knowledge of its relations with the living system can only be acquired by observation.

But if medicines were absorbed, they could not, it is averred, produce their specific effects. Why? And where is the evidence that they could not? When thrown into the stomach and bowels, we observe certain phenomena to follow, and I know of no proof that a part of them are not owing to absorption. It cannot be said that they are solely referable to correspondence and dependence of function, unless it be proved that none of them spring from absorption. If we do not obtain the same results whether we inject medicines into the veins, or place them on a sensible mucous membrane, it proves nothing against the doctrine of absorption. In the first place, when thrown upon a sensible surface, the impression which they make is propagated to distant parts by sympathy and dependence of function, and the effects thus generated are blended with those to which a subsequent absorption gives birth. Secondly; When injected into a vein, they are mixed with a small quantity of blood, which goes, thus highly impregnated, directly to the heart, and throws that, and the other great organs, into a state of irritation, which could not result from the introduction into the blood-vessels of an equal quantity of foreign matter, by healthy absorption. Indeed, such is the mechanism of that absorption which I suppose to introduce medicinal agents into the circulation, that it is quite impossible for them to reach the heart in a concentrated state. Thus, if taken up by the veins of the stomach, they are mixed in the trunk and hepatic extremities of the vena portæ, with nearly all the blood of the cæolic and two mesenteric arteries, before they are allowed to reach the heart;
and must therefore exert on that organ effects very different from those produced in our experiments. But we do know from experiment, that many articles may be so injected into the venous system, as to produce effects nearly identical with those which follow their introduction into the stomach. Thus, castor oil will purge, tartrate of antimony vomit, emetin produce coma and congestion of the lungs, nitre increase the flow of urine, and opium occasion sleep, when they are thrown directly into the venous blood.

It is remarkable, that the energy with which these and other medicines act when injected into the veins, has been cited as an evidence that they are not absorbed. Does it not rather prove the reverse? It shows that the system is extremely susceptible to impressions of this kind. If the injection of medicines into the blood produced no effects, it would certainly demonstrate that they never acted in consequence of being absorbed.

Medicines, when absorbed, are either suspended or dissolved, in the serum of the blood, and with it carried through the system. They are thus made to act upon a surface incomparably more extensive than while they remained in contact with the mucous membrane of the stomach; and that this vascular surface is extremely sensible to their impress, we have just seen. All the conditions necessary then to a decided effect, are present, and why should that effect not be produced? It is asked, if they act after being absorbed, what it is that determines a narcotic upon the brain, a diuretic upon the kidneys, and a chologogue upon the liver? I reply, that we do not know, any more than we know, why it is that the impression which an agent makes on the stomach, should be transmitted to the brain, kidneys, or liver, instead of the lungs or uterus. And this reply I hope will satisfy every exclusive sympathist.

To conclude this part of the subject, I am compelled to believe, that some medicines are absorbed, do retain, in part at least, their active qualities, are diffused throughout the system, act upon the solids as foreign bodies, and are finally assimilated or discharged with the excretions;—in which they are
discoverable by our tests, more readily than while in the blood, simply because they are less diluted.

It remains to inquire, whether this mode of operation can be united with the other two which I have acknowledged.

Why can it not? Why should they not co-operate? The stomach was not created as a receptacle for medicines; nor were ipecacuanha and guaiacum secreted for remedies.—These and the other articles of the materia medica, are resorted to, because good effects, under certain circumstances, are derived from their administration. Experience has taught us this. But experience has not informed us, that if they affect the stomach, into which, generally, they are first received, they cannot, therefore, reach other organs of the body, and act on them. On the contrary, both experiment and observation agree in demonstrating, that as long as a medicinal agent remains in contact with any part of the living body—the stomach or bowels, the liver, the heart, the brain, the kidneys, or the skin, it continues to act. It is indeed under a physical necessity to be operative; and from this law, taken in connection with the fact, that medicines are absorbed, we may deduce a priori evidence, that their modus operandi is not simple, but complicated. To establish this proposition is the chief object of my paper. I will proceed to illustrate and confirm it by a few examples.

When emetin is taken into the stomach in fatal doses, it first affects that organ unfavourably, and at length produces coma and death. On examining the dead body, the lungs are found greatly engorged. When injected into the veins, coma and death are equally the consequence, and the lungs are found in the same engorged condition. Now as those viscera of the head and chest, in the latter experiment, are not affected by their association with the stomach, but by the direct action of the injected poison; we should, I think, believe that in the former case it is absorbed and carried to them, after having produced its first impress upon the stomach.
Again, sulphur applied to the surface of the body, cures many of its diseases: administered internally, it is known to reach the skin, and produce equal effect: but at the same time it removes constipation and betters the condition of the digestive organs, so often impaired in cutaneous diseases. Between these organs and the skin, however, there is an intimate reciprocal sympathy; so that the improved health of the former is necessarily followed by amendment in the latter. We are thus enabled to understand why sulphur is more beneficial in some cutaneous maladies, if given internally, than applied externally. Its curative operation begins with its impress on the mucous membrane of the stomach, and terminates with its action in the skin, as it makes its exit from the system. Its modus operandi equally involves sympathy and absorption.

The mode of action and effects of opium are still more complex and diversified. When taken in a large but not deleterious portion, the following are its characteristic effects.

1. The excitement of the system, at large, is exalted; the contractions of the heart are rendered more frequent and vigorous, and the cerebral functions more animated.

2. Drowsiness presently supervenes, the organs of sense become obtuse, the functions of the brain are reduced in energy, and the action of the heart is rendered slow and deliberate, with a soft and full pulse.

2. Slight diaphoresis, with itching, terminates the series of effects.

Here we have many successive constitutional disturbances, and they afford prima facie evidence of a complicated modus operandi. There is, I think, but little to require or sustain the belief, that they all spring immediately from the impress of opium on the mucous membrane of the stomach. That the first are referable, directly and indirectly, to such impress is extremely probable; but the second, it appears to me, arise from the transmission of the medicine to the heart and brain, and other internal organs; the last from its elimination through the skin.
Thus the medicine acts on the stomach as an excitant, and by correspondence of function, propagates its effects to the brain and heart. They being excited, transmit to the organs over which they preside, and reciprocally to each other, an increasing quantity of their respective influences, and hence, by dependence of function, more exalted vital properties and a higher grade of excitement, manifest themselves in the system generally. At length the medicine is absorbed, and enabled to act directly upon the brain and heart, when the sensibility and contractility of these, and the other organs, are diminished, and the second class of effects which I have enumerated ensue. Finally, it is thrown out of the system, through the skin, and some disturbance of feeling and function in that organ, is the consequence of its presence.

Let it not be said that in contending for these different modes of action, I am multiplying causes beyond the requisitions of the case. The effects to be explained are numerous; and, regarded as the product of a single proximate cause, inconsistent with each other. No rule of philosophising requires us so to consider them. Masses of phenomena should be analysed, until the various causes which produced them are laid open to our view; when they are to be admitted, whether they be few or many.

I shall close with a few reflections naturally growing out of what has been said.

Why are the constitutional effects of medicines, when applied to the skin, the nares and the rectum, so limited and uncertain, in comparison with their effects when received into the stomach, or injected directly into a vein? The skin and scheiderian membrane, are acted on with energy by a great number of articles; and so irritable is the rectum, that substances which the stomach will quietly retain, often produce great irritation, and are speedily rejected from that bowel. Should not this difference be, in part, ascribed to their being absorbed from the stomach, more than from those other surfaces? I think it should.

Several medicines, for example, the bark, digitalis, the squill, and super tartrate of potash, produce very few of
their distant and constitutional effects, when they purge. This is scarcely explicable on the sympathetic theory alone; for they impress and irritate the mucous membrane of the stomach and bowels, when they purge, as well as when they do not; but if purging takes place, we cannot expect absorption to be performed, nor the constitutional effects, as far as they depend on the introduction of these medicines, or their active constituents, into the blood, to ensue.

It is not uncommon, after a few experiments with a new medicine, to decide that it belongs to the class of stimulants, sedatives, narcotics, diuretics, or some of the other arbitrary divisions of the Materia Medica; and by this reference, all further examination is generally foreclosed. We have ascertained that it is an errhine or a vermifuge, and that is enough. This proceeding goes really, if not avowedly, on the idea, that the medicine which produces one striking effect, produces no other; or that articles which agree in the main point, agree equally in their subordinate effects; both of which are errors, that a physician cannot adopt without danger to his patient.

Finally, much has been written on the subject of stimulants and sedatives. The great effort has been to prove that the latter have no existence; but those who have undertaken the task have too often overlooked the multiplicity of properties which belong to a single medicine. They have been captivated by an imaginary simplicity. Inverting the rules of philosophical logic, they have drawn analogies from the minor to establish the major. Observing that tartarized antimony, digitalis, nitre, and the vegetable acids, irritate the parts to which they are applied, the conclusion has been immediately drawn, that in their general operation, these medicines are stimulants. But an unbiased attention to that operation will convince us, that the topical is no index to the constitutional impression. That whatever may be said of the former, the latter is unquestionably sedative; and hence that we may employ those medicines to lower the powers and actions of the general system, with as much confidence as if their local impression were the reverse of what it is.
With these remarks I close this desultory essay. I do not pretend that it contains any new ideas. My chief object has been, to recognise and sustain certain principles which I believe to be correct, though not universally adopted; and this, I hope, has been in some degree accomplished.

Cincinnati, August 1827.

Art. VIII. Report of Diseases treated at the New-York City Dispensary. By John I. Graves, M. D. one of the Physicians to the City Dispensary.

The diseases of the summer months have not offered much worthy of remark. There have been fewer cases of bowel affections among children prescribed for at the institution, than in former seasons; and these we think have been less severe than those met with during the summer of 1825. Among adults we have seen many cases of dysentery, but attended with nothing peculiar, or requiring particular notice. The plan of treatment has been the same as that detailed in last year's report.

The Fevers in most cases have in the beginning been intermittent, but they in a few days assumed a remittent form of a low type, attended with much torpor of the system, particularly noted in the chylopoietic viscera. The pulse in general has not been much accelerated, but rather exhibiting the wiry feel, and easy compressibility met with in diseases of irritation. The tongue has shewn an early disposition to become parched, and when the disease has been protracted over a week, has exhibited a smooth, glassy, dull red appearance. At this stage we have noticed also a disposition to cough, and a difficulty in swallowing, with a dull, uneasy soreness about the epigastrium and umbilicus. The skin has shown a more than usual degree of dryness, and has not readily been affected by diaphoretics. These symptoms clearly show the seat of the greatest derangement, consequent upon the atmospheric influence so peculiarly and powerfully affecting the system during the warmer months.
We have observed above that diaphoretics have availed but little in producing a natural state of the skin. In this class of remedies we have lost a general degree of confidence, and with safety may say that they scarcely deserve any higher place in the materia medica than minor adjuvants to those medicines which seem particularly adapted to produce a healthy action in the secretory vessels of the liver, stomach, and intestines. We think that too much confidence is often placed in this class of remedies. This confidence, we may be permitted to suspect, has often led to a neglect of the cause of the dryness of the skin, and while attention has been in too great a measure confined to that, the internal organs have been suffered to acquire increased derangements, and even disorganization. The state of the skin we must look upon as simply a symptom of internal disorder, and with this view direct the attention to the cause rather than to the effect. The knowledge that we possess of the powerful sympathy existing between the skin and chylopoietic viscera is of the first importance, and deserves to be borne in mind in the treatment of fevers. The skin will become natural in proportion as we remove the internal derangements, and these in our climate principally affect the liver in the first place, and the other organs connected functionally with it. Purgatives and emetics are chiefly relied upon to produce this effect. The former we consider of paramount importance, and among the first of these we place calomel. In due time we have found that this, in connection with castor oil, and other medicines of the same class, act as the best diaphoretics.

During the early part of the season many cases of intermittent, (not assuming the form which we have already described,) were met with, irregular both as to the paroxysm itself and the day of its appearance. It is a singular circumstance, for which we cannot account, that these cases appeared mostly in the higher parts of the city, while the regular intermittent was found to occur in the lower parts, and in such places where the soil is artificial, or what is familiarly called "made ground." The cases of which we were speaking were attended with much gastric irritation. Emetics
were extremely beneficial a short time before or immediately upon the appearance of each paroxysm; after which the antimonial solution was given, and continued with an occasional purgative of calomel during the first, second, and third days, or until the tongue, which in the beginning was very foul, began to clear off. Quinine, and indeed every other tonic, proved injurious if given before the disease began to lose its irregular form, and assume a more equal length in its stages.

Since our last there have been many cases of Measles.—They have been generally of a mild character, although many put on a more severe form, accompanied by symptoms of tracheal and pneumonic affections. Purgatives during the febrile stage have been given by some with much advantage, rendering, it is said, the course of the disease milder, and unattended with danger. In our experience, however, the administration of active medicines during the appearance of the eruptions has not been found to afford as happy results as when left almost entirely in the hands of nature. Our practice has been, on the day (when in the regular course of the disease) the eruption would make its appearance, to give an emetico-cathartic, with a pediluvium. This seemed to relieve the high state of excitement which is observed to take place on the day of the eruption, principally by equalizing the balance of the circulation, relaxing the external surface, and preventing or relieving the lungs from congestion. These effects were kept up by an equable temperature of the room, and confining the patient entirely to bran or flaxseed tea, acidulated with lemon juice. When there was soreness about the throat or chest, liniment was applied freely. In no instance have we found a necessity for the use of blisters; and indeed it may be said, that in this disease, when attacking children, they have decidedly an injurious effect. Without free depletion, either by purgatives or the lancet, previous to their application, they add to the excitement already existing. This is an established fact. With the views which we have gained practically, depletion during the active appearance of the eruption, produces a disposition in the disease to take on
what is called a typhoid tendency, materially and injuriously affecting the regularity of its course. When we have seen the eruptions retaining their bright appearance after the fourth day, or disappearing before that time, or when they begin to fade and again re-appear with a darker shade, as is generally the case, there is, in almost every instance, serious cause of alarm. Now, we think that we have observed that any depletion further than what is the effect of the powers of the system, during this time, always causes this irregularity and its consequences.

After the eruption has gone through its course regularly for five or six days, and the appetite begins to return, we then have administered a cathartic of oil, and if cough remain, a simple expectorant. This plan is simple, and in the disease, as it almost always appears among us, will be found sufficiently active.

Among several cases of Croup, there was one in which the evil effects of the application of blisters to children has strengthened the opinion which we have long entertained.—We must confess that among the many cases which have fallen under our notice, we have not seen one where we have thought that they have proved beneficial, the disease being of an acute character. The extremely sensitive state of the nervous system in young children, bears badly the excessive irritation caused by this remedy. The high state of arterial action already existing in inflammatory affections, and the rapidity with which disease runs its course in such subjects, are easily forced to a dangerous extent by any cause capable of adding to the existing excitement. If any simple accidental agent may produce this effect, as we often find that it does, even to a fatal termination, it may be supposed that reason alone would lead to a conclusion that this remedial application would prove injurious. Reason, however, is not always to be relied on; for the arguments whence we arrive at what may be thought its dictates, are often fallacious. It is from observation that we have formed our opinion. Exclusive of the irritation, the skin of children is of such delicate organization, that the blistered surface very readily takes on a gangre-
nous state. If this do not prove fatal in every case, it very
powerfully adds to the demand upon the powers of the sys-
tem, whereby the force required to overcome the original seat
of the disease, is injuriously lessened. The case of the child
affected with croup, to which we referred, is an instance of
this. The disease had progressed to its second stage. After
the free admission of emetics, the physician in attendance
ordered a blister to be applied to the throat. When procured,
it being thought too large, the mother was directed to divide
it; through negligence this was not done, but the whole laid
on. It produced its usual effect. In a short time after being
removed, it began to assume a bad appearance—gangrene
followed—and death finished the scene. We recollect a se-
vere case of ophthalmia which we saw three or four years since.
It exhibits the injurious effects of blisters in increasing local
inflammation and a general irritation. The physician, (who
was an old and experienced practitioner) after the free admi-
nistration of purgatives and emetics, which gave relief,
directed blisters to be applied behind the ears. The eyes
became worse, and the febrile excitement was increased; de-
pleting means were again used with similar benefit as in the
first instance. After three or four days the surfaces behind
the ears began to heal, but as the eyes were slowly but sen-
sibly getting better, other blisters were applied; the conse-
quence was, that the eyes were as bad in twelve hours as they
were the week before. The mother observed this, but the
plan was persisted in, for the books said so, and it was a
usual remedy. Finally, the eyes were only cured when these
were laid aside, and antiphlogistics were alone adminis-
tered.

If it were necessary we could adduce other cases, and all
running nearly the same course; showing strongly, we think,
that blisters are materially injurious as contra-irritants in
young subjects laboring under acute inflammatory affections.

Physicians have always been among the most zealous and efficient supporters of scientific associations. Every European institution indicates this in the catalogue of its memoirs, and the narrative of its discoveries.—Nor have they confined their investigations to what is strictly medical. The natural sciences, those interesting adjuncts to a complete professional education, have been intensely and successfully studied; and if we are indebted for many of the splendid discoveries in Chemistry to talents out of the profession, it must at the same time be conceded, that the triumphs of this modern science were prepared in the investigations of the older physicians, and have been followed with no lagging step by their successors.

The numerous and important papers to which we have alluded, are a constant subject of reference with the well-read student. Some, indeed most of them, have been transferred to our elementary works, and form part of the common stock of knowledge which we now enjoy. Occasionally a few are forgotten, and furnish opportunity for some fancied "genius" to make "discoveries," thus indicating at once his ignorance and his presumption.
There is indeed no literary quackery more prevalent at the present day than that of presenting common-place remarks in a somewhat new form, and either interspersing them with extracts from various authors, the references to which are conveniently furnished by some laborious and honest writer of rather antiquated standing, or what is far more common, because it appears more original, borrowing largely without acknowledgment. But while we are struck with the intellect and intelligence of the author, an examination of some earlier writer develops the source of this borrowed light. "They quote nobody," (says Gibbon, in speaking of a parallel case,) "according to the last fashion of the French writers."

We confess that we have taken a "retrospective review" of the transactions of the oldest scientific society in our country, somewhat with an intention to point out priority of remark, if not originality of discovery, wherever they shall appear due. This however, although a just, must necessarily be an incidental object. We are induced by other motives, which we trust our readers will approve.

The Transactions of the American Philosophical Society are now contained in eight quarto volumes, published during an interval of nearly half a century. We are informed, and we believe correctly, that complete sets can hardly at present be obtained; and even if they could, the numerous papers on other subjects, not connected with our science, prevent them from being readily purchased by members of the profession.—Under these circumstances we have thought that an analysis of the medical papers scattered through the volumes, might prove interesting as well as useful. It will recall the names of some of our medical ancestors,—men from whom the honour cannot, by any fraud, be taken, of having been the earliest in prosecuting the science amidst difficulties which we cannot sufficiently appreciate. We need hardly indicate its further value as furnishing a convenient means of reference.

We shall arrange the papers in question under the following titles:
ANATOMY AND PHYSIOLOGY.

Under this head may be noticed eight papers.


"It had been long believed that the Sinuses, or cavities in the body of the Os Sphenoides, were exclusively formed by that bone, when Winslow suggested that a small portion of the orbitar processes of the Ossa Palati contributed to their formation.

"Many years after Winslow's publication, Monsieur Bertin described two bones which form the anterior sides of those sinuses, and contain the foramina by which they communicate with the nose.

"These bones he denominates "Cornets Sphenoidaux," and states that they are most perfect and distinct between the ages of four years and of twenty; that they are not completely formed before this period, and that after it, they appear like a part of the Sphenoidal bone. According to his account they are laminae of a triangular form, and are originally in contact with the anterior and inferior surface of the body of the Os Sphenoides, so that they form a portion of the surface of the cavity of the nose. He believed, that as they increase in size, they become convex and concave, and present their concave surfaces to the body of the sphenoidal bone, which also becomes concave, and presents its concavity to those bones, thus forming the sinuses.

"This account of Mr. Bertin has been adopted by Sabatier, and also by Boyer, who has improved it by the additional observation, that these triangular bones are sometimes united to the ethmoid, and remain attached to that bone when it is separated from the Os Sphenoides. Bichat and Fife have confirmed the description of Boyer.

"The specimens of Ethmoid and Sphenoid bones, herewith exhibited to the society, will demonstrate, that in certain subjects, about two years of age, there are continued from the posterior part of the cribriform plate of
the Ethmoid, two Hollow Triangular Pyramids which, when in their proper situation, receive between them the azygos process of the Os Sphenoides.

"The internal side of each of these pyramids applies to the aforesaid azygos process; the Lower Side of each forms part of the upper surface of the Posterior Nares; the External Side at its basis is in contact with the Orbitar Process of the Os Palati. The base of each Pyramid forms also a part of the surface of the Posterior Nares, and contains a foramen which is ultimately the opening into the Sphenoidal Sinus of that side.

"In the Sphenoidal Bones which belong to such Ethmoids as are above described, there are no cells or Sinuses; for the Pyramids of the Ethmoid bones occupy their places. The azygos process, which is to become the future septum between the Sinuses, is remarkably thick, but there are no cavities or sinuses in it.

"The sides of the Pyramids which are in contact with this process are extremely thin, and sometimes have irregular foramina in them, as if their osseous substance had been partially absorbed. That part of the external side of the Pyramid which is in contact with the orbitar process of the Os Palati is also thin, and sometimes has an irregular foramen, which communicates with the cells of the aforesaid orbitar process.

"Upon comparing these perfect specimens of the Ethmoid and Sphenoidal Bones of the subject about two years of age, with the Os Sphenoides of a young subject who was more advanced in years, it appears probable that the azygos process and the sides of the Pyramid applied to it, are so changed, in the progress of life, that they simply constitute the septum between the Sinuses; that the External side of the Pyramid is also done away, and that the Front Side and the Basis of the Pyramid only remain; constituting the Cornets Sphenoidaux of M. Bertin.

"If this be really the case, the origin of the Sphenoidal Sinuses is very intelligible."

2. Some account of a motley-coloured or pye negro girl and mulatto boy, exhibited before the Society in the month of May, 1784, for their examination. By Dr. John Morgan, from the history given of them by their owner Mons. Le Vallois, Dentist of the King of France, at Gaudaloupe, in the West Indies. Vol. II. p. 392.

Adelaide, the girl in question, was the daughter of two blacks, natives of Africa. She was at this time two years old, of a clear black colour, verging to brown, "except that she has a white spot bearing some resemblance to an aigrette, the point of which is at the root of the nose, and it rises into the hair above the forehead, of which it occupies about an
inch in width from the margin to the fontanelle. In this part the colour of the hair is white, and it is curly like the hair of negroes in general." In the middle of the forehead, and in the aigrette, was a black spot. About one half of each eyelid, both upper and under, was black, while the remaining half (towards the nose) was white. On the chin also, was a white spot, stretching below to the upper part of the throat. The body generally was of a black colour; the arms, however, at the upper and middle parts were white, interspersed with black spots.

Some of these black spots were, on close inspection, found to diverge into radii, like a star. The skin, however, was soft and smooth. The health of the child was good, and her form and features beautiful and animating.

The pyed mulatto boy was about six months older than Adelaide, and the fruit of a connexion between a negro woman and a white man, an European. He also had a white aigrette on his forehead: the hair, however, on that part was white, mixed with black. The stomach and the legs, from two inches above the ankles to the middle of the calf of the legs, were entirely of a beautiful lively white, and there was also a white spot in the upper part of the penis. Over the white parts of the legs was a light white down, longer and thicker than children commonly have at this age.

3. Observations intending to favour a supposition that the black colour (as it is called) of the Negroes, is derived from the Leprasy. By Dr. Benjamin Rush. Read July 14, 1797. Vol. IV. p. 289.

Many facts, says our author, recorded by historians as well as physicians, show the influence of unwholesome diet in having produced the leprosy in the middle and northern parts of Europe in the 13th and 14th centuries. The same cause, combined with greater heat, more savage manners, and bilious fever, probably produced this disease in the skin among the natives of Africa. Other circumstances render this supposition probable.
1. The leprosy is accompanied in some instances with a black colour of the skin. Dr. Thiery in his account of the diseases of Asturias, in Spain, after mentioning that there are twenty hospitals for lepers in that province, observes that one of the species of the disease is termed the black albaras of the Arabians. "The skin becomes black, thick, and greasy. There are neither pustules, nor tubercles, nor scales, nor any thing unusual on the skin. The body is not in the least emaciated. The breathing is a little difficult, and the countenance has some fierceness in it. They exhale perpetually a peculiar and disagreeable smell."

2. The leprosy is described in the Old Testament, and by many ancient writers, as imparting a preternatural whiteness to the skin. Travellers in tropical climates inform us that this is still prevalent, and is perpetuated through many generations. Hawkins, who visited the interior of the African continent, mentions that the individuals affected with this whiteness are destitute of the black pigment in the eye, and their hair is red or ash-coloured. Yet they are born of black parents, and have all the features of the other inhabitants.—The difficulty which naturally suggests itself that both these states cannot originate from a leprous taint, is avoided by saying, that "it is in strict conformity to the operations of nature in other diseases. The same state of malignant fever is often marked by opposite colours in the stools, by an opposite temperature of the skin, and by opposite states of the alimentary canal."

Bougainville also relates a fact indicating a connexion between the black colour of the negro and the leprosy. He visited an island in the Pacific, where the inhabitants were composed of negroes and mulattoes. They had thick lips, woolly hair, and were sometimes of a yellowish colour.—They were short, ugly, and most of them infected with the leprosy.

3. The leprosy sometimes appears with white and black spots blended together in every part of the body. Such a state of skin occurred to a black man in Virginia.
4. The leprosy induces a morbid insensibility of the nerves. This is very striking in negroes.

5. Lepers are remarkable for having strong venereal desires. This is universal among the negroes, and hence their uncommon fruitfulness when they are not depressed by slavery.

6. The big lip and flat nose so universal among the negroes, are symptoms of the leprosy. Dr. Rush observes that he has more than once seen them in the Pennsylvania Hospital.

7. Our author candidly confesses that the woolly head of the negroes "cannot be accounted for from climate, diet, state of society, or bilious diseases, for all these circumstances when combined, have not produced it in the natives of Asia and America, who inhabit similar latitudes." There is, however, a fact in the history of leprosy which will probably throw some light upon this part of the subject. "The trichoma or Plica Polonica of the Poles is a symptom of leprosy. This is evident, not only from the causes which originally produced it, but from its symptoms. From this fact, it would seem that the leprosy had found its way to the covering of the head, and from the variety of its effects upon the skin, I see no difficulty in admitting that it may as readily have produced wool upon the head of a negro, as matted hair upon the head of the Poles."

But (our author next inquires) how shall we account for the long duration of this colour of the skin through so many generations, and even ages? He answers that leprosy is the most durable in its descent to posterity, and the most indestructible of any disease with which we are acquainted. In Iceland, Dr. Van Troil tells us, it often disappears in the second and third, and re-appears in the fourth generation.—Again, peculiarities of figure have been transmitted for ages in particular districts. Thus many of the inhabitants of the Highlands of Scotland have the same red hair and the same high cheek bones which are ascribed to their ancestors by Tacitus. Even the goitres of the Cretins of the Alps are transmitted through many generations.
If it be objected that the leprosy is an infectious disease, and that no infectious quality exists in the skin of the negro, "I would reply (says the author) that the leprosy has in a great degree ceased to be infectious, more especially from contact; and secondly, that there are instances in which something like an infectious quality has appeared in the skin of a negro. Thus two white females (one in North Carolina and the other in Buck's County, Pennsylvania,) not only acquired a dark colour, but several of the features of a negro, by marrying and living with black husbands."

"It is no objection to the theory I have attempted to establish, that the negroes are as healthy and long lived as the white people. Local diseases of the skin seldom affect the health of the body, or the duration of human life. Doctor Thiery remarks that the itch, and even the leprosy, did not impair longevity in those people who lived near the sea shore in the healthy climate of Galicia."

If we concede to this theory the need of ingenuity, we shall probably have gone to the full extent that it deserves. In several instances the similarity remarked by the venerable and distinguished author, has been found to fail; and in none more strikingly, we believe, than where he ascribes powerful venereal appetites to lepers. Late investigations, particularly in the island of Madeira, would seem to render this opinion very questionable.* Dr. Rush's conjecture may be placed alongside that of Blumenbach's, who ascribes the black colour of negroes to an unnatural state of the biliary secretion, produced by heat, and increased through many generations.—Carbon is thus generated in abundance by the vessels of the skin, and the dark tinge produced; and the remarks of an able anatomist on this are equally applicable to both. "We are particularly surprised that the acuteness and good sense of Blumenbach should have allowed him to resort to an explanation grounded on such remote analogies, and so obviously weak and inadequate, as that by which he attempts to

account for the black colour of the negro. To require us to believe that all the dark coloured races labour under hepatic disease, (or leprosy) when our senses inform us that they are in perfect health, is really too much.*

4. An Essay on the Vermilion Colour of the Blood, and on the different colours of the Metallic Oxides, with an application of these principles to the Arts. By Samuel F. Conover, M. D. Read June 20, 1806. Vol. 6, p. 247.

In this paper Dr. Conover enumerates the remarkable discoveries, by means of which pneumatic chemistry has illustrated this phenomenon. "Priestley, Cigua, Hewson, Thouvenel, and Beccaria, have made many experiments on the blood, and have all united in the opinion that its vermilion colour should be attributed to the absorption of oxygen by the blood, in its passage through the lungs during respiration." Chaptal in his treatise on the blood, after stating that its colour had been attributed to iron, observes that as oxygen alone is absorbed during respiration, this colour is owing to iron calcined by the pure air and reduced to the state of red oxide. Here is a recognition that oxygen gas consists of oxygen and caloric. But by the experiments of Berthollet, it appears that "oxygen and light have great affinity, that light is capable of combining with it, and that it contributes, along with caloric, to change it to a state of gas."

Our author, after quoting the opinions of Fourcroy and Davy on this subject, and endeavouring to show their insufficiency to explain the change in question, brings forward his own theory, "predicated (as he says) on the Newtonian and pneumatic philosophy."

Light is a mixture of seven different coloured rays of different refrangibilities, and derived from the sun—heat is a simple elementary body, and a necessary constituent of this planet—oxygen gas is a compound of light, heat, and oxy-

gen, and oxygen is held in its gaseous state by means of caloric. Again, "It has also been proved beyond the possibility of doubt, by the experiments of the most respectable chemists, that the blood contains iron." "Hence, when atmospheric air is taken into the lungs, the oxygen gas is absorbed by the blood in its passage through the lungs during respiration, and from the great affinity of oxygen to the iron in the blood, it unites with that metal, and the red ray, a constituent of oxygen gas (the most difficult of refrangibility) is absorbed at the same time by the iron, and becomes fixed, which constitutes the red oxide of iron, and illustrates, in a philosophical manner, the beautiful phenomenon of the vermilion colour of the blood, while the heat is set at liberty, and the other six constituent rays of light, either become fixed in the other parts of the blood, or are carried off in a latent state, by expiration; for it is an established principle in optics, that some rays enter into the combination of bodies, while others are reflected, and this in proportion to the greater or less affinity of the several rays with these bodies."

Dr. Conover imagines that a strange confirmation of his theory is derivable from the experiments of Davy with nitrous oxide gas on the blood of animals. That substance, composed of oxygen 37 parts and nitrogen 63, "exists perhaps in the most intimate union which those substances are capable of assuming, for it is unalterable by those bodies which are capable of attracting oxygen from nitrous gas, and nitrous acid at common temperatures." Venous blood exposed to the nitrous oxide, was rendered darker and more purple than the same kind of blood exposed to atmospheric air. Also when blood was drawn from two animals, one who had breathed the nitrous oxide and the other atmospheric air, it assumed different colours, corresponding to the differences mentioned in the last experiment. Dr. Conover's inference from all this is, that the affinity between the constituents of nitrous oxide, is much stronger than that between the constituents of atmospheric air—"that the temperature of the blood, together with the attraction of the iron therein, being insufficient to disengage much oxygen from the nitrous oxide, consequently
less heat is evolved from the partial decomposition of the nitrous oxide, than from atmospheric air in the process of respiration; therefore the iron in the blood is only oxidized in an inferior degree, which accounts for the fixation of the violet coloured ray, (the easiest of refrangibility,) and resolves the phenomenon of the purple colour which the blood assumes, from the effects of the nitrous oxide." Blood altered by the nitrous oxide is capable (says Davy) of being again rendered vermillion by exposure to common air, or oxygen gas.


The partridge in which the above monstrosity was observed, was opened by Monsieur Vergé, Senior Surgeon of the Artillery at Williamsburgh, (Virginia,) in February, 1782. "The two hearts were attached to one lung by blood vessels."

As to the subsequent communications, they both notice the same animal. A horse, nine years' old, was observed to have a living snake or worm in its left eye. Its serpentine form was perfectly visible, and its length apparently between three and four inches. At this time the eye still retained its transparency; but at a subsequent period, when the horse was brought to Philadelphia and publicly exhibited, there was a high state of inflammation present, the aqueous and vitreous humors were confirmed, and the organ had a white milky appearance, bordering on the colour of a cataract. The horse seemed to suffer greatly, and it was necessary to strike him suddenly, in order to have him open the eye. The motion of this tormentor was then distinctly visible.

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Dr. Morgan quotes parallel instances from the Records of Medicine, showing that living animals have insinuated themselves into various parts of the human body. Such as the Guinea worm into the leg, a jointed worm into the liver. (See Medical Essays of a Society of Physicians in London.) Ruysch, who was the most eminent anatomist of his day, observes, that "daily experience proves that worms may be generated in all parts of the body."


This essay is interesting from the biographical notices contained in it. We shall confine ourselves to these, as the directions for making corroded preparations are now to be found in many of the leading works on dissection.

Dr. Morgan was a well educated and intelligent American, who spent several years abroad for the purpose of perfecting himself in Medical Science. He saw and was intimate with many, whom we now reverence as "our fathers" in learning, and whose fame is a part of the glory of our profession. He studied anatomy with the two Hunters; "was practical dissector to the celebrated Drs. Colignon and Smith, Professors of Anatomy in the Universities of Cambridge and Oxford; and afterwards improved himself by practice at Paris with Mons. Sue." The art of using corrosion in anatomical preparations, he acquired from the Hunters; but it was totally unknown in France till he communicated it, first at Paris, and afterwards in the south of France. He communicated a memoir on the subject, with a preparation of the vessels of the kidneys, to the French Academy of Surgery in 1764; and since that time, Sue, the Professor of Anatomy, made respectful mention of this circumstance in his work, entitled "Anthropotomie." Dr. Morgan however adds, that he took "no notice of my being a Pennsylvanian by birth, or native of America. The reason may be, that Americans before the Revolution being but little considered in any other light than as colonists, their nation was seldom taken notice of."
"But what gave me equal pleasure and surprise, (he adds) was the admiration excited of my presenting only a part of the vascular preparations of a kidney by corrosion, (the rest being broken down in a journey by land of above a thousand miles), which was expressed by the celebrated Morgagni, the illustrious professor of anatomy in the University of Padua. He had kept up a literary correspondence with Ruysch when alive, had been favoured with specimens of this great man's preparations, and declared that in comparison to the preparations I gave him, they were 'rudis indigestaque moles.' From this small specimen, he said, ex ungue leonem, he could readily comprehend that the usefulness of this kind of knowledge amongst the learned in anatomy must become great and extensive."

So far as Dr. Morgan could ascertain, this art cannot be traced farther back than to the learned Dr. Nichols of London, who formerly gave lectures in anatomy both there and at Oxford, and from whom Dr. Hunter acknowledged to his pupils that he received his first information. "He then deserves to be looked upon as the author and inventor of this art."*

**SURGERY.**

There are but two papers that strictly belong to this division.


*Although the credit of this invention is not given to Dr. Nichols in the common biographies of him, yet he is not altogether deprived of it. While preparing this article for the press, we opened the July number of the London Quarterly Journal of Science. In a review of the "Gold-headed Cane," written by Dr. Maemichael, the following extract from this work is given. "Frank Nichols, who married a daughter of Dr. Mead's, was the inventor of corroded anatomical preparations. He was at one time Professor of Anatomy at Oxford, and author of a treatise de Anima Medica." p. 233.*
As the history of this case is very generally known among the profession, we shall be very brief in our abstract of it.

The patient, a negro woman aged 45 years, had noticed it about eighteen years previous: it had grown gradually, and never been painful. It arose from the upper part of the back, extending equally on both sides, and with a very large base. Its circumference at the neck, or narrowest part, was 2 feet 10 inches; at the thickest, vertically, 3 feet 9 inches; and horizontally, 3 feet 1½ inch. **The narrowest part of the tumour was thicker than the patient's body.** Its surface was tolerably regular, but very large and numerous veins were seen in various parts of it.

The operation was performed at the Pennsylvania Hospital on the 22d February, 1815. Having previously administered an opiate, she was placed (at the suggestion of Dr. Physick) on her face upon the table, fifteen minutes before an incision was made, and assistants were directed to elevate the tumour in such a manner as to empty it as completely as possible of its blood. This expedient had a remarkable effect on the superficial veins. Many of them contracted and could not be perceived.

After making the external incisions in such a manner as to preserve skin enough to cover the surface left by the removal of the tumour, and the skin being dissected and turned back, the tumour was rapidly removed from its base. It adhered to some of the spinous processes of the vertebrae, and to the muscles and tendons near the spine. The loss of blood was very trifling; and the wound united kindly by the first intention. The patient was discharged cured on the 15th of April.

The tumour (called steatomatous by Dr. Dorsey) weighed 25 pounds, but when filled with blood was probably much heavier.

Dr. Dorsey in his comments on this case, insists very justly on the influence of position on the circulation of the blood. He observes that he once attended an operation on a comparatively small tumour, seated on the back, the extirpation of which was found impracticable, in consequence of bleeding
from the superficial veins. The application of this precept to hemorrhage from blood-vessels in the extremities, and to certain local inflammations, is very manifest. A bleeding from an aneurismal arm was arrested by keeping the hand in a vertical position. Dr. Physick, according to our author, originated the practice which he found so beneficial in the present case.


When there is a collection of blood from a blow or fracture of the skull, all authors advise the trepan, in order to discharge the collected fluid, but the difficulty of ascertaining the part where it has accumulated, often makes frequent repetitions of the operation necessary before it is discovered.—Thus (says Mr. Deveze) Mareschal, first surgeon to Louis XIV. trepanned a young lady twelve times before he found the effusion occasioned by a fracture of the parietal and temporal bones on the same side.

To prevent these repeated operations, our author suggests the separation of the dura mater from the cranium in the direction of the fracture. The fluid will be pressed towards the opening, and may thus be evacuated. The danger which might be apprehended from this is found by experience not so formidable. Blood cannot collect between these parts without their separation, and yet they return to their natural state when the fluid is evacuated by the trepan, even after the parts have been long disunited. Thus in a case where a deep-seated and violent pain succeeded an attack of scarlet fever, and it resisted the use of all the usual remedies, Mr. Deveze prescribed the trepan. The operation was performed in the centre of the painful part, and an opening was thus given to the exit of a quantity of pus. The pain was removed, and the patient cured. Here was a long separation of the dura mater from the skull.
In effusion occasioned by violent blows, the separation is sudden, violent, and often extensive, yet if properly managed, the patient will often recover. An individual was brought to the French Hospital at Philadelphia, in March, 1795, with a fractured skull. He was comatose, and his face inflated and discoloured with ecchymosis. He had been trepanned on the spot before bringing him to the Hospital; and Mr. Deveze, on examination, found that the instrument had been applied on the right parietal bone, about an inch from the coronal suture. Other fractures were present, but no depression. The comatose drowsiness, with involuntary discharge of urine, and inability to swallow, continued for twenty-four hours. It occurred at this time to Mr. Deveze, that the leading symptom was owing to blood collected under one of the points of the fracture in the temporal region, as the effusions which had been formed under the other fractures had been evacuated in removing the dressings, he determined to adopt the method now recommended, of separating the adhesion between the skull and the dura mater in the direction of the fracture. He took a very flexible silver spatula, and pressing it towards the bone, bent it to take the form of the part upon which he acted. At length after having entered half an inch below the temporal scaly suture, the resistance suddenly ceased, and the instrument entered a hollow part; at the same time the blood flowed in great quantity. The patient now began to move strongly, endeavoured to rise, and talked without knowing what he said. From this time he gradually recovered, blood came away from the dressing on the next day, and on the fourth after the accident he had perfectly recovered his senses. The wounds suppured and healed kindly, until the 28th of December, when he left the Hospital.

**MATERIA MEDICA.**

1. *An Analysis of the Chalybeate Waters of Bristol, in Pennsylvania.* In two Letters from Dr. John De Normandie, of Bristol, addressed to Dr. Thomas Bond, one of the Vice-Presidents of the Society. Dated Sept. 10, 1768. Vol. I. p. 368.
Another analysis of these waters was subsequently published in Barton's Medical and Physical Journal.


A few years previous to the date of this paper, Dr. Hugh Martin, a surgeon of one of the Pennsylvania regiments stationed at Fort Pitt, came to Philadelphia and advertised to cure cancers with a medicine which he said he had discovered in the woods, near the garrison. As Dr. M. had been a pupil of Dr. Rush, the latter endeavoured to obtain some information from him concerning the remedy. It appeared to be the powder of some well dried root. Dr. Rush also saw it applied several times. This was done either by placing the powder on the parts affected, or by touching them with a feather dipped in a liquid, which appeared to be this root dissolved in water. "In several cancerous ulcers of the superficial kind, the cures he performed were complete. When the cancers were much connected with the lymphatic system, or accompanied with a scrophulous habit of body, his medicine always failed, and in some instances did evident mischief."

Dr. Rush, with a desire to ascertain what acrid vegetable possessed the above qualities, used several of the principal ones, (the arum, stramonium, phytolacca, &c.) but without success. He was led to doubt whether the powder was a simple root; but the doctor on all occasions continued to assure him that it was wholly a vegetable production.

In 1784 the doctor died, and in a few weeks Dr. Rush obtained from one of his administrators a parcel of the powder in question. On examining it closely, a number of white particles were found scattered through it. Suspecting that these might be arsenic, he threw some grains on heated coals, when the garlic smell was freely emitted. Placed between two plates of copper, and heated red hot, they gave a silverish hue to one of the plates. He then used a third test, "which had been lately communicated to the world by Mr. Beyman, and
which is supposed to be in all cases infallible. A small quantity was infused for a few hours in a solution of a vegetable alkali, and then a solution of blue vitriol was poured upon it. The colour of the vitriol was immediately changed to a beautiful green, and afterwards precipitated."

The proportion of the arsenic appeared to be about one-fourtieth of the whole compound; and it is deemed probable, by Dr. Rush, that various vegetable compounds were employed at different times. In the powder examined by him, he conjectured that the solanum lethale, or deadly nightshade, was used. The effect can only have been to blunt the activity of the arsenic. The liquid used by Dr. Martin was doubtless a solution of that substance in water.

Dr. Rush concludes by remarking that the use of arsenic in cancers and foul ulcers is of ancient standing. "It is the basis of Plunkett's and probably of Guy's well known cancer powders." The violence of its action, however, renders its use occasionally dangerous, but in his opinion the composition of Dr. Martin tends to prevent this ill consequence.


This communication consists of letters from Dr. Duché at London, and Dr. Davidson of the island of St. Lucia. The former mentions that Dr. Saunders, in lecturing at Guy's Hospital, spoke of a new species of bark, which he had introduced into the practice of physic with great success. A cold infusion was found more effectual in removing fever, than a chemical extract from the same quantity of the other kind. It contains a much larger portion of resin, and has a much stronger aromatic taste than the common bark.

Dr. Davidson mentions that this bark was introduced into practice at the island of St. Lucia (of which the tree is a na-

* This of course is the test commonly known under the name of Scheele's Green.
tive) in 1779, by Dr. Young, physician to the British troops. Its freshness, the little attention bestowed in drying it, and the large doses in which it was exhibited, produced alarming fits of vomiting and purging, and deterred them from continuing its use, until they recently met with Dr. Saunders’ work on the Red Bark. Having carefully dried it, and given it in the cold infusion with greater caution, and in less doses, it was found highly beneficial, particularly in tertians, and in a remarkable species of dysentery conjoined with an intermittent fever. The purgative effects which it still preserved, enabled them to use it earlier in the treatment of those diseases.

Dr. Morgan, (to whom specimens had been sent by both his correspondents) states that he found it most efficacious in the cure of obstinate remittent and bilious fevers.*


The object of this communication is to show that the P. diphylum is a plant distinct from the P. peltatum, not only in its specific but its generic characters. Having established this, Dr. Barton proceeds to describe and name it “Jeffersonia binata.” This alteration has been received by succeeding botanists (of whom it is sufficient to mention the names of Pursh, Nuttal, and Torrey) as correct.

In the appendix to the papers are some remarks on the medicinal qualities of the Podophyllum peltatum, or May Apple. It is much esteemed by the several tribes of Indians. Its root is used as a purgative, emetic, and anthelmintic. Dr. Barton promises hereafter to publish an account of his expe-

* Dr. Davidson calls this species of Cinchona C. Caribaea Sanctae Luciae. He however expressly mentions that it is different from the C. Caribaea of Dr. Wright, described in the “Medical Commentaries.” The present is undoubtedly the C. Oblongifolia of the Dispensatories.
riments with it. Meanwhile he remarks, that it _generally proves purgative_, though he has known it, in several cases, to operate as an emetic. The common doze for an adult is from 18 to 20 grains of the dried root, in powder. Its advantages as a purgative over jalap or rhubarb are, that it can be used free of adulteration—that it operates in a smaller doze—that it does not so frequently prove emetic as jalap, nor gripe so much as rhubarb—and lastly, it is not so nauseous as either. Dr. Barton adds, that he thinks it possessed of a narcotic quality.

Although unacquainted with any medicinal properties in the Jeffersonia, he conjectures that they are similar to those of the _P. peltatum_.

5. _An Inquiry into the comparative Effects of the Opium Officinarum, extracted from the Papaver Somniferum, or White Poppy of Linnaeus, and of that procured from the Lactuca Sativa, or cultivated Lettuce of the same author._ By _John Redman Coxe_, M.D. an Honorary Member of the Philadelphia Medical Society, and a Senior Member of the Chemical Society of Philadelphia, Read November 24, 1797. Vol. IV. p. 387.

The sedative powers of the _Lactuca sativa_ (says Dr. Paris) were known in the earliest times. No one, however, according to our author, has extracted from it a substance possessing all the properties of opium in the highest degree.—"Some have arrived at the very threshold of this discovery, but have stopped from the pursuit." Thus Jones in 1701, Alston in the Edinburgh Medical Essays, Hill in his British Herbal, and Dale in his Pharmacologia, all speak of the juice of the lettuce as resembling opium, and possessing anodyne qualities.

Dr. Coxe proceeds to relate the result of the application of sundry chemical tests to the two kinds of opium. Acetate of lead, sulphate of iron, lime waters, nitrate of copper, &c. all produced nearly identical effects on both. Comparative experiments were next instituted on animals, with the aqueous solutions and spirituous tinctures of each. Whether injected into the cellular substance or the stomach—whether excitement or
death was intended to be produced, the train of symptoms was very nearly the same with equal quantities. Dr. Cooper exhibited some of the lettuce opium to individuals in the Pennsylvania Hospital, with results similar to those induced by the officinal.

Dr. Coxe concludes his Essay (which we have greatly abridged) by giving some directions for collecting the juice of the lettuce. He prefers circular incisions, and they should be made when the plants are beginning to seed. It should then be suffered to dry on the stalk, after which it is scraped off, collected, and inspissated by the gentle heat of a sand-bath.

The extensive cultivation of the lettuce is recommended by our author for the purpose of providing ourselves at home with its valuable product.

**TOXICOLOGY.**

Four papers belong to this division.


Dr. Rush was called to a child between three and four years old, who was labouring under violent fever, delirium, tremors in her limbs, and a general eruption on the skin, accompanied with a considerable swelling, itching, and inflammation. Although unable to account for such acute symptoms at the particular season of year, he still prescribed depleting remedies, but with little effect. The mother at last recollected that the stramonium (which grew in the garden) had formerly disordered the child in a similar manner, though in a much slighter degree. Dr. Rush now exhibited a solution of tartar emetic, which produced nothing but a free vomiting of phlegm, and succeeded it by doses of castor oil, which in a short time brought away a great number of stramonium seeds.
The delirium gradually abated, but the tremors in her hands continued at times, and she was stupid and blind.— The pupils were much dilated, and she caught at the bed clothes like a person in the low stages of fever. Believing that some of the seeds still remained in the stomach, he again exhibited an emetic, which brought away eighty of them. The stupor and blindness however continued, when another vomit brought up twenty more. Upon this all her complaints vanished, and in a few days she appeared perfectly well.

In explanation of the remarkable fact that this poison remained nearly a week in the stomach without more dangerous effects, Dr. Rush observes that the seeds were of the last year's growth, and were become so dry and hard as to resemble little pieces of horn.

It is mentioned that Drs. Bond and Harris used lemon-juice in a similar case, where the strongest emetics proved ineffectual in discharging the poison. Dr. Rush considers it an antidote to this substance. He also adds, that the *Anthelmia*, or *Worm Grass* of Jamaica, and the *Carolina Pink Root*, are both considerably narcotic, and when taken in too large quantities, produce effects somewhat similar to those of the stramonion.


This is probably the earliest account on record of the poisonous effect of the *Cicuta maculata*, a plant that is annually destroying many lives in various parts of our country. Dr. Greenway calls it *Cicuta venenosa*, and mentions among its trivial names, wild carrot, wild parsnep, fever root, and mock eel root. "It does not resemble a carrot or parsnep in the stalks, leaves, or flowers, though the root has some resemblance to a parsnep in colour and smell, and the seeds have also a great likeness. It resembles the Angelica, and the
mischief that has been done by it, has proceeded from mis-
taking one for the other."

In May 1789, three negro boys, while searching the woods
for wild angelica or eel root, dug up the roots of the cicuta,
and one of them supposing it to be the substance wanted, eat
some of it. His companions, who meanwhile had left him,
found him at their return speechless and senseless, but with-
out any spasm; his limbs were perfectly flexible, and he ap-
peared to be in a deep sleep, deprived of all motion except
that of respiration. Some simple remedies were given, and
he recovered his senses in a day or two, but a degree of
stupidity and dulness remained for a length of time. Had
not the quantity eaten been very small, the consequences
would undoubtedly have been fatal.

3. An account of the most effectual means of preventing the dele-
rious consequences of the bite of the Crotalus Horridus, or Rattle-
snake. By Benjamin Smith Barton, M. D. Read August

In an excursion through the western settlements of Penn-
sylvania, in 1785, Dr. Barton endeavoured to acquire every
possible information respecting the effects of the poison of the
rattlesnake, and the methods of prevention or cure that are
commonly employed. Many vegetables were shown him, as
good for the bites of snakes. The diversity of these would
lead one to believe, either that the poison was not so danger-
ous and fatal, as has been generally imagined, or that the ac-
curacy of his informers was questionable. Allowing the lat-
ter to its proper extent, Dr. Barton further adds, that in the
season of languor and torpidity, the rattlesnake bites with
seeming reluctance, and without any, or with but little ill con-
sequence arising from the wound. Even during the time
when the animal is best qualified to strike and injure, indi-
viduals are often found, the cavities of whose venomous fangs
are entirely, or nearly, destitute of their active power. It
appears to be secreted slowly, and the author mentions an
experiment made by his father, which would seem to illus-
trate this very strikingly. A chicken bitten by a rattlesnake
died in a few hours. On the next day, another chicken bitten in the same manner, survived the injury much longer than the first. The third day, another chicken bitten as before, swelled much, but recovered. On the fourth day, several chickens were suffered to be bitten, without receiving any injury. Lastly, the place where a person is bitten, causes great diversity as to the symptoms. An injury to a ligamentous or tendinous part, is not by any means so dangerous as one to a vein or artery.

All the circumstances, in the opinion of Dr. Barton, enable us to explain why some have experienced little inconvenience from the bites of the rattlesnake, and how so many vegetables have acquired reputation as antidotes.

The rude and simple practice of the western settlers, for preventing and curing the bite is as follows. A tight ligature is immediately thrown above the part, if practicable, where the poison has been introduced. The wound is next scarified, and a mixture of salt and gunpowder, or sometimes either, is laid upon the part. Over the whole is applied a piece of the bark of the white walnut (juglans alba). At the same time, some of the vegetables hereafter enumerated are given internally, either in the form of decoction or infusion, along with large quantities of milk.

Among these remedies, our author places the greatest reliance on the ligature, scarification, and the local stimulant applications. The white walnut acts as a blister, though not powerfully; and he supposes that all remedies of that nature must prove serviceable. He has heard of one instance, where a blister of cantharides was applied with the best effect; and Linnaeus, (in his Flora Suecisa) mentions the application of the bark of the Daphne mezereon, a very acrid substance, to a wound made by a snake with perfect success.

Internal remedies, he supposes, may be of some use, by exciting a most profuse perspiration. Some of them act powerfully as diuretics, and in this way may also be of service. "The Indians in the State of Jersey, I have been informed, formerly made use of the expressed juice of the leaves of the common garden rue, (ruta graveolens) for the bite of the
rattle snake." It was given in large doses, (two table spoons-
ful of the juice every two hours) until a violent perspiration was
induced. The use of the ligature meanwhile was not omitted.

When this poison is thrown into a vein or artery, the effect
is more sudden, and the powers of medicine are much less
considerable. Catesby observes, that "when a rattlesnake
penetrates with his deadly fangs, and pinches a vein or artery,
inevitable death ensues; and that, as I have often seen, in
less than two minutes. The Indians know their destiny the
minute they are bit; and when they perceive it mortal, apply
no remedy, concluding all efforts in vain." We should not,
however, in such cases, omit the use of the ligature; and per-
haps the rue, or some other powerful sudorific, may also be
of use. Sucking the wounded part is very generally practised
by the Creeks, and some other native tribes in the southern
states.

When the poison has been actually introduced into the
general mass of the blood, alarming and characteristic effects
soon appear. Nausea, and even vomiting are early symp-
toms, and this, indeed, in most cases of bites, whether of
blood vessels, or of muscular parts. The pulse becomes full,
strong, and greatly agitated. The whole body begins to
swell; the eyes become so entirely suffused, that it is diffi-
cult to discover the smallest portion of the adnata that is not
painted with blood. In some cases, there is hæmorrhage
from the eyes, nose, and ears, and large quantities of blood
have even been known to be thrown out on the surface of the
body, in the form of sweats. During all this, the patient
suffers much pain. In this melancholy state but little can be
done. Dr. Barton, however, advises the use of the lancet, in
those instances where a violent action of the arterial system is
present without hæmorrhage.

In concluding his Essay, Dr. Barton discountenances the
idea of absolute specifics, and places most reliance on the
general remedies which have been enumerated. A long list
of vegetables is given, which have been recommended as re-
medies, "either by Indians, or by the white inhabitants of
our continent." Of these, we shall only enumerate a few.
Sanguinaria canadensis,* Hypoxis erecta,† Laurus sassafras,* Polygala senega,† Prenanthes alba,† Hieracium venosum,† Aristolochia serpentaria,† Veratrum luteum? Liriodendron tulipifera.† The inner bark of this last, (the tulip tree) after being bruised and infused in water, is given by the Cherokees, to horses which have been bitten by the rattlesnake. Actaea racemosa,† Sanicula canadensis,† &c.†


Dr. Barton was induced to examine the subject from having observed in the year 1785, some of the disagreeable effects of American wild honey on persons who had eaten it, in the western parts of Pennsylvania, near the river Ohio.

The symptoms produced are as follows. At first, delirium, which is sometimes mild and pleasant, and sometimes ferocious; ebriety, pain in the stomach and intestines, convulsions, profuse perspiration, foaming at the mouth, vomiting and purging, and, in a very few instances, death. Occasionally vomiting is the earliest symptom, and in such cases, the subsequent effects are much milder. A temporary paralysis of the limbs is sometimes noticed.

Spontaneous vomiting and purging seem to be the common mode of relieving the system from the deleterious effects of the honey.

* Used externally. † Used internally.

† Mr. Audubon, the celebrated ornithologist, who has resided for several years in the southern states, and has long studied the habits of animals, says, in a recent communication on the rattlesnake,—“The quantity of venom infused is more or less, as the animal may have been more or less irritated. If made to bite themselves, their own flesh affords no antidote, for they die in excruciating torments.” He adds, that “among the native Americans, cutting out the wounded part, and searing, or, as it is termed in the country, scaring it with fire, is considered the most effectual; but even this requires great promptitude to afford a chance of safety.” Jameson’s Edinburgh New Philosophical Journal, No. 5.
The districts in which the greatest injury seems to have occurred from it, are South Carolina, Georgia, and the two Floridas. Dr. Barton has strong doubts whether the poisonous differs from the edible honey, either in colour, taste, odour, or consistence, although such seems to be the prevailing opinion. The former is alleged to be of a darker colour and thicker consistence.

Our author is of opinion that its qualities are derived from the flowers of certain plants which abound in the countries just named. He particularly enumerates the following:

1. *Kalmia angustifolia* (dwarf laurel, ivy, lamb-kill).—A striking illustration is given. A party of young men removed a few hives of bees to a district in New-Jersey, where this plant abounded. The bees increased rapidly, but their honey intoxicated all who used it. Unwilling to lose the fruits of their labour, they made it into metheglin; this, however, produced similar effects.

2. *Kalmia latifolia*, (laurel.)—The leaves of this plant are poisonous to sheep, horned cattle, and horses. "Many of General Braddock's horses were destroyed by eating the leaves and twigs of this shrub, in June, 1755, a few days before his defeat." It is also the plant eaten by pheasants in the winter, and which renders them poisonous.

3. *Kalmia hirsuta*, a native of South Carolina, Georgia, and Florida, and in the two last supposed to be the principal vegetable from which the deleterious honey in those parts is produced.

4. *Andromeda mariana*, (broad-leaved moor-wort.)—Its leaves are poisonous to sheep. Honey from its flowers has frequently their smell. It is a very common plant.

To these Dr. Barton adds others, from which, he thinks, a noxious honey may be gathered, as the *Rhododendron maximum*, or Pennsylvania mountain laurel; *Azalaea nudiflora* (wild honey-suckle); and *Datura Stramonium*.

Several of the Greek and Roman writers relate instances of the deleterious properties of the honey of certain countries. These are succinctly quoted by Dr. Barton.

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As the present article has exceeded its intended limits, we shall conclude our analysis in some future number. The subjects that remain to be noticed are important and interesting.

[To be continued.]

Art. II. Report of the Medical Society of the City of New-York on Nostrums, or secret Medicines. Part I. Published by order of the Society, under the direction of the Committee on Quack Medicines. New-York, 1827. 8vo.

It has long been a matter of just astonishment and regret, with the better informed classes of the community, in this State, that its enlightened legislature, anxious as it has always proved itself to promote the interests of science and literature, should not only have neglected to suppress quackery altogether, but should have even held out inducements to the artful and illiterate to practise successfully upon public credulity, and trifle with the health and lives of their fellow-citizens. It is, in fact, a singular and unaccountable solecism in the legislation of an enlightened and free people, that while the interests of all other professions are acknowledged and protected, those of medicine alone should have been so much neglected. It would seem as if they were not considered of any importance to the public weal, instead of being, as they truly are, blended, if not identified with it.1

On what other supposition can we explain the provision of the act intended to regulate the practice of physic and surgery in this State, which grants an immunity to any vile pretender to medicine, or illiterate nostrum vender, provided the means with which he practises his imposture are the growth of this country! What lamentable ignorance does this provision not display? what reflection does it not cast upon the mental obliquity of those who could originate, and the
culpable indifference of those who could tamely submit to
the enactment of such a law? Had this law been enacted in
the dark ages, it might have excited less surprise; but that,
in the nineteenth century, when the sciences are cultivated
with a zeal that is almost universal, so gross an ignorance of
the elements of one of them most intimately connected with
domestic comfort and the preservation of life, should be dis-
played in the representative hall of a great and flourishing
State, is indeed a phenomenon not easy to be explained.—
Resting on the assumption, that articles of the Materia Me-
dica which are indigenous to our own soil, can do no harm if
they do no good, it places in imminent peril the lives of its
inhabitants, and gives a legal sanction to mercenary empiri-
cism of the most dangerous sort. It surely required only a
moment's conversation with a well-informed naturalist—we
will not say a physician, as in his case interest would have
been suspected, by the originators of such a law, to have
biassed his opinion—to have made them acquainted with the
notorious fact, that some of the most powerful poisons in the
toxicological table are the growth of these very United States,
supposed to be so harmless in their productions; and that some
of these poisons have, in the hands of ignorant medicasters,
long since and often proved the most deadly foes to human
life. For the honour of our State, and for the credit of our
profession, we sincerely hope the time is not far distant,
when this odious feature will be obliterated from our code of
laws.

The foregoing remarks are fully warranted, we conceive,
by the incalculable extent of the evil alluded to; and it is
therefore with considerable gratification we obey the call of
justice, which demands it at our hands, to concede a large
share of gratitude and praise to the same Legislature, for
the incorporation of Medical Societies throughout every
county in the State.

Among the many benefits which have resulted from the
establishment of these institutions, (and we are glad to
avail ourselves of this occasion to remark that they were
both intended to be, and have been, of a practical and not a speculative nature,) there has been no one so strongly felt as the silent but effectual defeat of legalized quackery and irregular practitioners. We do not assert that these do not exist. Too many of them still abound, as many a Galen's head, and portable vapour bath, too truly evinces to every passer by in our streets. But instead of abounding, as they did in the days of the historian Smith, "like locusts in the land of Egypt," they are now like (fallen) angels, "few, and far between." The line of distinction is broadly drawn, and every quack and every quackish doctor, has a price set upon his head and a mark upon his forehead. They are known.

It is in the laudable pursuit of the great object of suppressing quackery, that the investigations which form the subjects of the reports now before us were undertaken; and although the articles considered in them are not of the class to which we have referred in our introductory remarks to this article—they are parts of one great whole, and owe much of their encouragement and countenance in this State, to the existence of the law granting immunities to quacks. To enlighten the public mind on this important subject, to unravel the mystery and dissolve the charm which invest secret remedies, by exposing their ingredients, and their powers of doing harm, is therefore an imperative duty, and one from the performance of which we hope the society will not shrink through a timid or time-serving policy. It is a duty the more strictly enjoined by the interesting consideration, that its faithful and able discharge will be the most effectual means of removing the veil which has hitherto dimmed the mental vision of our legislators, and the surest earnest that medical men are the only proper repositories of medical power—the only sure judges of medical qualifications.

CHAMBERS' MEDICINE.

The first nostrum which the Committee appointed by the Medical Society of the city and county of New York, have
taken under consideration, is "Chambers' Medicine." In their choice of this article we consider they have been fortunate, and in the discussion of its merits they have displayed learning and ability which will deserve the respect and thanks of the profession, and the community. Intemperance is a crying evil of our land, and whatever promises to remove it, deserves consideration and respect. This consideration and this respect should not, however, be blindly and rashly thrown away. As it would be the height of error to reject an article because it was first introduced to notice by a quack, so on the other hand would it be the extreme of folly and weakness to yield credence, much less give authority to such an article, before its virtues were investigated, and its power of injury, as well as its beneficial tendency, properly understood. This seems to us the judicious medium, and upon this have the Committee proceeded. At the same time there is a duty which physicians owe to their profession—there is a responsibility into which they entered most solemnly when they commenced the practice of their profession, which no love of popularity, no visionary views of general good, should ever induce them to overlook, forget, or sacrifice.

"As physicians, we are bound by solemn obligations of duty to the public, as well as to our own reputation, to reprobate, and, if need be, to expose every attempt to impose upon the credulity of the prejudiced or the ignorant, in matters relative to our profession; none of us, therefore, can make such a compromise with those engagements which we voluntarily assumed, when first authorized to practise physic, as to permit us to hold any terms with nostrums or nostrum venders, for one of two things—all secret remedies are either devices of cunning to serve personal interest, or they are not; if they are, the apology of the profession for opposing their circulation is complete on every sound principle of common sense; if they are not, and their authors have claims to intelligence as physicians, it is certain that these are made of necessity at the expense of moral obligation on their part, and can have no right to our confidence, on any principle of common honesty. But as it occasionally happens that secret remedies possess some active virtues, which chance or accident may have at first developed, it may become as much the interest of the public, as the duty of physicians, to examine scrupulously into their composition, in order that their merits may be fully tested, and that the profession may avail itself of them, under circumstances favourable to their particular application; for even such
medicines as nostrums are calculated to do infinitely more harm than
good, from the general terms in which they are recommended, and the
want of skill in those who are charged with their administration; as there
is no truth of more universal application, than that any medicine which is
beneficially operative, when properly exhibited, must be in the same ratio,
injurious, if improperly used.

"In order to form a correct estimate of the virtues of any one remedy
proposed for the cure of a disease, it is necessary to settle the character of
that disease, and ascertain whether or not, the simple form in which it ap-
ppears, admits the possibility of its cure by a single medicine, be that what
it may, upon sound pathological principles; for that there are such prin-
ciples, no man at this day will venture to deny. If a disease be attended
in its course, by various and diametrically opposite conditions of the sys-
tem, requiring remedies of opposite characters—if, as is frequently the
fact, the name of a disease, apart from its attending semeiology, is the most
blind indication of cure that a physician can follow—if contra indication
is productive of more, and more frequent embarrassment to the medical
attendant, than any other condition of the patient which can present itself
—what is the probability, a priori, that any one remedy will suffice for the
cure of any disease? If it be objected that the remedy is compound, it
only removes the difficulty one step further; it cannot produce two oppo-
site results at once: and in this single remark, trite as it is, will be found
an entire justification of the abandonment of all quack medicines propos-
ed for the cure of diseases by name. With these remarks, we proceed to
examine Chambers' Remedy for Intemperance."—pp. 4, 5.

We next proceed to the analysis of the medicine, for which
the committee inform us they are indebted to Mr. Chilton,
chemist of this city.

"Having procured a parcel of the remedy from Mr. Chambers, which
weighed 225 grains, it was divided into portions of 25 grains each, for the
purpose of making separate trials, previous to a more complete investiga-
tion. The powder contained in the parcel, the general colour of which is
grey, is evidently a mixture of differently coloured particles, by no means
uniform in their size. The first step in the examination, was to pass it
through a sieve of bolting cloth, in order to separate the coarse part from
the fine. In the coarse part left upon the sieve, could be easily distinguish-
ed parts of cochineal grains, masses of black matter like lampblack, with
red and brown parts of skins or pods, having the pungent taste of pepper,
and affecting the nostrils like Cayenne. The fine part which had passed
the sieve, was boiled with one ounce of water, in a Florence flask, and filter-
ed; the solution, which resembled an infusion of cochineal, passed with
difficulty through the filtering paper: the residuum, after washing with
another ounce of water, and dried, was a powder consisting of black and yellow particles, sulphur in powder mixed with carbon. The solution which exhaled the odour of tea, had very slightly the odour of sulphur also. Various re-agents, such as vegetable infusions and tinctures, metallic salts &c. threw down precipitates from this solution. Muriate of barytes, nitrate of silver and oxalate of ammonia had comparatively little effect, from which we may infer, that neither sulphates, muriates, nor lime, in notable quantities, were present. Among the effects produced by re-agents on the solution, the precipitates afforded by acetate of lead and hydro-sulphuret of ammonia were the most interesting, as they correspond with the presence of tartar emetic. The precipitate thrown down by acetate of lead, was dissolved by dilute nitric acid. The precipitate by hydro-sulphuret of ammonia, was orange red, which might arise from arsenic as well as from antimony. The following experiment was made to determine this point. To a fresh portion of the solution, carbonate of potass was added, and then sulphate of copper; the carbonate of copper precipitated was intensely blue: had the orange precipitate owed its colour to arsenic, the precipitate would have been green. As a further confirmation, a few drops of a watery solution of white oxide of arsenic were added, which converted the precipitate, with its supernatant fluid to a lively grass green.

"As these experiments seemed to demonstrate the presence of tartrate of potass and antimony, the next step in the examination was, to obtain it in an insulated state. For this purpose, fifty grains of the remedial powder were boiled in two ounces of water; the filtered solution was evaporated to dryness; on re-dissolving the dry mass, a portion of it was left; by slowly evaporating the second solution, a crystalline mass was deposited, mixed with colouring matter. By repeating the crystallizations, which were much impeded by the presence of gummy matter, perfectly well formed tetrahedral and octahedral crystals of emetic tartar were obtained. These crystals weighed six grains; but as they were obtained by frequent crystallizations, they were probably not more than one half of the tartar emetic contained in the fifty grains. If we allow this supposition to be correct, the whole parcel of remedy, weighing 225 grains, must have contained a dram of this very active ingredient. The residue from the 50 grains of the last experiment, which weighed 13 grains, was digested in alcohol, sp. gr. .825, which took up 2\(\frac{2}{3}\), and left 10\(\frac{1}{4}\) grains. This alcoholic solution left by evaporation, a red resinous extract, extremely pungent and hot: by adding water to this alcohol solution, a milkiness was produced by the precipitation of the resin. The 10\(\frac{1}{4}\) grains which the alcohol refused to take up, in the last experiment, were treated with muriatic acid, which dissolved out six grains and left 4\(\frac{1}{2}\) grains; by adding potass to this solution, a purple powder fell down which weighed two grains. The 4\(\frac{1}{2}\) grains left by the muriatic acid in the last experiment, were exposed in a crucible to a red heat; sulphur burned off with its characteristic blue flame and suffocating odour, and three-fourths of a grain of silex was left."
"It is evident from these experiments, that the constituents of Chambers' remedy are the following, viz. Emetic tartar—capsicum—sulphur—carbon—cochineal and gum. The silex probably belongs to the pod of the capsicum. The gummy ingredient is probably gum arabic, and was somewhat embarrassing, as it impeded the passage of the solutions through the filter, and affected the crystallizations. The sulphur is seen floating on the surfaces of the solutions, and appears as a yellow powder in the residuums, mixed with carbonaceous matter.

"On a second trial with another parcel of the medicine, fifty-four grains of tartar emetic, in its crystallized form, was procured, and the mother waters still held considerable in solution, which on account of the gum entering into its composition, could not be conveniently separated."—pp. 7, 8.

Having devoted so much space to the preliminary remarks and the analysis of this report, we have little room left for the reflections suggested by the Committee in relation to this and other remedies recommended for the cure of intemperance. We cannot, however, withhold the expression of our approbation at the stand they have taken, under the sanction of the Medical Society, against all nostrums whatever as such. Their objections to the indiscriminate use of the article under consideration by uninformed persons, we consider warranted both by theory and experience. Its inefficacy in a large majority of confirmed cases, will scarcely be disputed after the enthusiasm excited by the delusive hopes encouraged by its deceased author shall have abated of its force by time and experience. Its ruinous tendency and its immediately fatal effects are also becoming matter of notoriety. The following is the conclusion of the report, and reflects credit on the professional independence and enlightened morality of its author, who, as we understand, is Dr. James R. Manley.

"Your Committee remark, that although the opportunities for acquiring information on the subject of this medicine were ample, and they took great interest in the results to which their inquiries might lead, they have found no reason to exempt it from the general censure to which all quack prescriptions are justly liable. Its effects, so far forth as they have been able to ascertain them, are just such as might have been anticipated from its composition, as shown by the analysis, and such as have followed the exhibition of analogous remedies, from the time that expedients of this kind were first adopted for the treatment of the destructive habit for which it is now proposed; with this difference, however, that in the hands of skil-
ful physicians, who possessed a thorough knowledge of the medicine they administered, whilst the same measure of benefit was derived, little or no harm was occasioned by its use; they have no hesitancy, therefore, in recording their conviction, that as a nostrum, (though it may be productive of much advantage in certain cases,) the general terms in which it is recommended, the general directions with which it is accompanied, and the indiscriminate manner in which it is liable to be used, far more than countervail its benefits.

"That certificates in its favour should be numerous, is very natural; and indeed, if they were not, this fact would stamp it with the mark of reprobation, as it is highly probable that more intemperate persons have been the subjects of its operation within six months, in the city of New-York, simply in consequence of its being a nostrum, or secret remedy, than would have become the patients of physicians, for the cure of the same habit, in the space of half a century.

"Your Committee in closing this report, have only to observe that it has been drawn up under a distinct recognition of the responsibility which may attach to its publication, in case the society should think proper so to direct. Drunkenness, as a vice, is so destructive of all morals, and as a disease, so remediless in its results; the evils which it entails are so calamitous, and the misery which it inflicts so poignant and mortifying, that it may be emphatically styled "the comprehensive curse;" involving the ruin of every faculty, whether moral, intellectual, or physical, which distinguishes man from all the irrational creation. It is no wonder, then, if all our sympathies should be enlisted in repressing its ravages and limiting its baneful influence; and it is no wonder, if in our eagerness to accomplish an object so desirable, we should lose sight of all consequences except the redemption of the drunkard: but sincerity is not truth, neither is purity of intention a justification, where ignorance is voluntary, or what is in effect the same thing, where prejudice precludes a rigid examination of that which humanity itself may even call duty. It is not our business to read a moral lecture for the direction of persons who are the guides of our youth and the exemplars of society, although we feel bound to suggest a salutary caution to all those who so far mistake, as to lend their characters and their influence to circulate a nostrum, which for all they know to the contrary, though there is abundant room for suspicion, and the information is easily acquired, may produce death." pp. 17—19.

**LEROY'S MEDÉCINE CURATIVE.**

Few empirics have ever presented themselves with a bolder front, and under a more specious mask than Leroy, the author of a treatise on all diseases to which the human frame is subject, considered in the compass of about four hundred duo-
decimo pages, all resolved into one essential condition, a depravation of the fluids, and all curable infallibly by one specific remedy, the vomi-purgative of Leroy! All other remedies are inert, or positively injurious; bleeding, if it give temporary relief, shortens human life at the prodigious rate of ten years for every pound lost! All other vomits and purgatives too are death to the patient. It is only this curative vomi-purgative which can remove any one and all—diseases simple or combined—whether sthenic or asthenic—depending upon excessive or defective action, &c. Even disorganization of structure, and lesions of solids, are not proof against the all-healing powers of this curative medicine. It has been no slight recommendation of this medicine to the unthinking, that instead of being kept secret, as specifics generally are, this panacea has been promulgated, and the very principles upon which it acts communicated, as by an oracle, to the universe. This candour has not been indulged without cause or motive. The cause has been the rigid enforcement of an excellent law which obtains in France, prohibiting all secret remedies:—the motive, to effect the overthrow of existing medical doctrines, and by singularity to obtain renown and opulence. The means have not failed of success. The book of Leroy has run through upwards of a dozen editions, and his medicine has obtained currency in almost every country penetrated by the French. The West Indies have particularly been inundated by his solutions and his mixtures; and it has fallen to our lot to witness more than one instance in which the indiscriminate and injudicious use of this evacuant, par haut ou par bas, has been attended with almost immediate fatality. Did the case require it, or was the book of Leroy more widely known in this country, we might be at the pains of exposing its contemptible absurdities. This is, however, unnecessary. With a single exception we have not heard of a regular physician authorising the use of this medicine: safe, and even beneficial in the same cases in which purgatives generally are, but like them liable to abuse, and capable of effecting incalculable mischief in the hands of the ignorant.
The following description of this medicine we copy from the Report:

"The following is Leroy's recipe for the preparation of his vomi-purgative:

Vin. Hispan : ʃ biv.

"Infuse for three days, frequently shaking the mixture, and obtain the tincture from the senna leaves by strong expression. To each pound of the wine add one drachm of tartarised antimony, and filter for use.

"The dose for an ordinary adult is a table-spoonful; to a child of seven years, half the quantity, to be repeated in an hour and three quarters, and then every hour and a half till the proper effect be produced. His rule is, to produce seven or eight full emetic and cathartic operations, but he has no objection to its going much beyond this point. His usual plan is to commence the treatment of all diseases situated in the upper parts of the body (such as are located above the pyloric orifice of the stomach) by giving one, two, or three doses of the vomi-purgative, at short intervals, until a certain degree of amelioration of the disease be obtained, and then to follow up the treatment with active and violent purging, till the disease is completely subdued, allowing of no other intervals to this daily purgation, than what the exhausted state of the patient may require. All diseases situated below the part indicated, he trusts solely to his purgative, repeated daily, or as nearly so as possible, to the final extinction of the disease. Some obstinate cases of disease, he says, will require from 60 to 100 doses of his medicine, before they will be entirely overcome. He makes his purgative of four degrees, which differ from one another only in the relative quantity of its ingredients. The first degree, he gives to children and very debilitated subjects, and is one-fourth weaker than the second degree, with which he commences the treatment of ordinary adults. The third degree is one-third stronger than the second degree, and is given where this last fails in a given quantity to produce the desired effect. The fourth degree is twice the strength of the second degree, and is in like manner resorted to where the third degree fails.

"The following is his recipe for the second degree, the ordinary preparation for adults.

Pulv: Rad : Convul : Turpetth : ʒ i.
Alcohol dilut. ʃ b xii. M.

"Infuse for 12 hours in a heat of 76°, strain, and add to the tincture the following syrup:

P. Sennae opt: ʒ viii.
Aq: bullient: ʃ b ii.
"Infuse for five hours, express and add to the liquor sacchar. alb. lb. iiiss. and boil to a syrup.

"The commencing dose of this purgative is two table spoonfuls fasting, which should produce from twelve to twenty full alvine evacuations. The dose to be gradually increased, if necessary, till it produces its proper purgative effect. If four table spoonfuls of the second degree does not answer the purpose, then that of the third degree must be resorted to in the same commencing dose as the other, and, in like manner, increased to the same quantity; when if it does not produce the desired effect, it must give place to the fourth degree, in doses of four table spoonfuls, and increased, if necessary; which degree will always be found quite sufficient for any case. A free use of diluent drinks is allowed during the operation of the purgative, and an infusion of tea may be given, to moderate the effects of the emetic in some cases. All other remedial agents are declared to be absolutely injurious, except, perhaps, blisters occasionally: as he has obtained good effects from their application to parts remote from the seat of the disease."—pp. 23—25.

SWAIM'S PANACEA.

That this medicine has been very efficacious in the cure of syphilitic disorders, is probably known to every one of our medical brethren in this country. With its history and composition they are not likely to be so generally acquainted; we shall, therefore, avail ourselves of the labours of the Committee, and present them with a brief account of this article, which has proved so profitable to its supposed inventor, and unfortunately obtained the sanction of so many authoritative names in the profession itself. We say unfortunately, because, although the medicine be allowed to be ever so excellent an article in the treatment of disease, still its adoption and recommendation by regular physicians, as long as it bore the name of a nostrum, was calculated to do harm, "by inspiring the public with increased confidence in nostrum-monsters, and thereby multiplying the number of those speculators on vulgar credulity."

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according to the Committee, to the "Syrup of Salza of De Angelis," all of them being essentially the same.

They all appear to be "very concentrated decoctions of sarsaparilla, formed into syrups, with other articles of little or no efficacy to disguise their true character." The base of them all therefore is the same, and their model is the "Sirop de Cuisinier," of which the following is the recipe:

R. Rad: Sarsap: lb ii.

Aq: tepid: O xii. Infuse for 24 hours, afterwards boil 15 minutes, express, and to the residuum add

Aq: O x. boil to O vi. repeat 2ce or 3ce, then mix all the liquors, and boil gently with

Flor: Borag: off.

Flor: Rosar:

Fol: Sennæ

Sem: Anis: àà ½ ii. Reduce to one half, strain, and add

Mel: com:

Sacchar: àà lbii, and boil to the consistence of a syrup.

The dose is one or two ounces, with or without a grain of corrosive sublimate added to each pound. The sarsaparilla ptisan is also to be taken throughout the day.

The rob de Laffecteur is the next article noticed, and the following is the recipe for its composition, taken from M. Al-lion, a French chymist:

R. Rad: Sarsap:

Arund: phragmit: àà ⅔ xxx.

Flor: Borag: off: ⅔ viii.

Fol Sennæ

Flor: Rosar: àà ⅔ ii.

Sacchar:

Mel: opt: àà lbvi.

Boil the sarsaparilla and marsh reed-grass in nine pints of water for one hour, strain off the decoction, and pour the same quantity of water on the residuum, which is to be boiled for two hours; towards the end of the boiling, add the borage flowers, senna and rose leaves, then strain off, and to both decoctions add the sugar and honey, and boil the whole to the consistence of a syrup.—p. 37.

This medicine was first used in this city by the elder Dr. Berger, father of the respectable practitioner of the same
name, now of this city. He recommended it in consultation with other physicians, who generally adopted it. Its subsequent history we give in the words of the Report.

"Among many patients, Mr. Swaim, then a book-binder living in this city, experienced its beneficial effects in his own person, and soon after succeeded in obtaining from Dr. N. J. Quackinboss, the practitioner who had administered it to him, the recipe for its formation, and the directions for its employment; whereupon he removed to Philadelphia and set forth his vegetable syrup, which he denominates Swaim's Panacea, for the treatment of those diseases for which the rob has been so long celebrated. In the first instance, Mr. Swaim's directions for using his panacea, for preparing the sarsaparillaptisan, and the quantity and times of taking it, in conjunction with the syrup, were the same, nearly verbatim, as those given by Dr. M'Nevin, in the publication above referred to, for the use of the rob; but of late he has altered his directions considerably, and has ceased to insist on the conjoined use of the sarsaparilla ptisan, even in small quantities. The flavour of the sassafras in the syrup first prepared by Swaim was very perceptible, but it is now the opinion of many, that he has substituted the leaves of the pippsissewa, the chimaphila corymboso of Pursh, for the marsh reed-grass, sassafras or guaiacum, which we think very probable. However this may be, the syrup also contains the oil of wintergreen (ol: gaultheriae); for its flavour is evident, both to the smell and taste. Swaim's object in this addition is, doubtless, to disguise the other materials, and to render the medicine agreeable to the taste; but it may also be a useful addition as a stimulant and carminative, obviating that loathing and disgust of the medicine, which sometimes occurs from its long continued use. The very profitable trade which Swaim has carried on with this article, (for it has been most extensively used, even with the approbation of many of the faculty, as we have already observed, and with effects equally beneficial with those to be obtained from its French predecessor,) has induced others to enter into competition with him, and some of them not unsuccessfully. There is every reason to believe that they are all of them virtually the same article. From the testimony of a medical man who lived for some time in France, in the same house with Laffecteur, where he prepared his rob; it appears that the sarsaparilla was the only constant ingredient, and that he was in the habit of varying the other articles as it suited his convenience, in order to render it more difficult for the public to ascertain with precision, its exact composition. However this may be, there is reason to believe that the marsh reed-grass is not entirely destitute of medicinal properties, for it has from the earliest times, possessed some reputation as an anti-scorbutic and diuretic. The pippsissewa, which it is supposed Swaim and his imitators now substitute for the sassafras or guaiacum, is probably a remedy of still more efficacy than the marsh reed-grass of Laffecteur. Many physicians think it a valuable addition,
and have been long in the habit of employing it in these syrups. They were probably first led to make this alteration, from a vague tradition existing among the aborigines of this country, that it possesses anti-syphilitic powers. However improbable this notion may be, it is very certain that it is endowed with active medicinal properties, which are essentially adapted to co-operate with the sarsaparilla, in the removal of those diseases for which these syrups are so much praised. It is admitted to be a powerful diuretic, an excellent tonic, especially in debilities of the digestive organs, and to possess a decided tendency to increase the transpiratory functions: effects, if we mistake not, to which these syrups owe much of their celebrity." pp. 35, 6.

**Medicinal Properties.**—We are informed that one of the committee has employed the sarsaparilla syrups very extensively in two public institutions, where ample opportunities existed for testing their efficacy in cases of the most obstinate character.

With respect to primary syphilis, it is justly observed, that the question, whether sarsaparilla will cure it or not, is of little importance, since it has been definitively settled that rest and antiphlogistic means are generally sufficient for its removal. In syphilitic ulcerations, the slow operation of the medicine does not warrant its use. But the Committee go on to observe—

"Not an uncommon sequela, of ill-treated and protracted syphilis, is an ulceration in the back part of the posterior fauces, of a character altogether dissimilar to syphilitic sore-throat, in which the remedy may be employed with advantage. These ulcerations are of an indolent and languid character; so much so, that they frequently make considerable progress, before the patient is aware of their existence. They seem to be rather a melting away of the soft parts, than the effects of inflammation. They present smooth, uneven, rounded edges, and an uneven, tuberculated surface, covered with a whitish slimy matter, which partakes more of a morbid secretion of the mucous membrane, than of ordinary pus. If the disease be not arrested, it finally extends downwards, and produces phthisis laryngitis. It is usually complicated with the other symptoms of the mercurial disease, as cutaneous affections, disease of the joints, ligaments, &c. to be hereafter described, and is commonly the last to yield to the influence of the remedy: often rendering it necessary to continue it for six or eight months, and after all, requiring the application of some stimulant or caustic solution, to cause the parts to heal. A strong solution of the sulphate of copper answers this purpose very well, after the habit has been sufficiently changed and renovated by the internal remedy." pp. 40, 41.
Syphilitic affections of the cutaneous and osseous system will be benefited by a course of the syrup and decoction, continued for six or eight weeks, but the muriate of mercury in small doses will expedite their removal.

Ulcers occurring in a vitiated habit, and which are aggravated by mercury, will frequently yield to this remedy.

There is an affection nearly allied to scrofula, over which the sarsaparilla exerts much control. It is thus described in the Report:

"The most extraordinary symptoms are, inflammatory affection of one or more of the joints, most usually the knee, wrist, elbow or ankle joints; more rarely the metacarpal finger and sterno-clavicular articulations. The inflammation of the joints is, in the first instance, of a sub-acute character, attended with soreness and tenderness to the touch, some stiffness on motion, a moderate degree of swelling, with pains darting through them, and little or no discoloration of the integuments; but as the disease goes on gradually aggravating, the swelling augments, becomes red and tender to the touch, more or less painful, with the supervision of general pains throughout the system, which continually harass the patient night and day, wearing him out with the hectic of irritation. Sometimes these swellings occur on the dorsum of the metacarpal or metatarsal bones, in the course of the fore-arm and leg, more rarely on the other bones, and run the same course as the affection of the joints. They are usually much larger and more prominent than the true syphilitic node. If submitted early to a proper course of treatment, they are usually dispersed, otherwise they only diminish in size, lose their inflammatory character, and leave the joint or part with a limited degree of motion and use. Besides the thickenings and inflammations of the articulations and bony envelopes, there is frequently ill-conditioned and indolent ulcerations on different parts of the body, especially on the hairy scalp and face, and in the posterior fauces, as before described. Under this load of disease, the constitution, before impaired, suffers severely; the pulse becomes small, irritated, and frequent; the skin moist and clammy, alternating with a state of dryness and morbid heat, with foul tongue, inappetency for food, and an irregular state of the bowels, inclining to looseness. As the disease progresses, the rheumatic pains become more constant and severe, the febrile irritation more intense, with evening exacerbations, night sweats, colliquative diarrhoea, progressive emaciation, and a general failure of the vital powers. This form of the disease requires a regular course of the syrup and decoction, to be continued for six or eight months; sometimes even longer. The amendment is always very gradual, often not very perceptible after four or five months treatment. The first indication of the disease yielding, is some improvement in the general health, with return of
appetite and quiet nights. If the disease has been of long standing, the joints usually remain somewhat swelled and ankylosed, but otherwise the patient will recover his health with a renewed tone and vigour of constitution." pp. 42, 43.

In thickenings of the periosteum and many chronic eruptions not venereal, it has also proved of service.

Cancer, common rheumatism, gout and chronic hepatitis do not seem to have received any check from this medicine.

In scurvy it would probably be a useful adjuvant of other means.

III. Modus operandi. The observations of the Report on this point are interesting, and deserve to be extracted.

"The most constant and evident effect of these syrups is, to maintain the bowels in an open and relaxed state: so great is this tendency, that the greater number of patients labouring under mercurial disease, the sequelæ of syphilis, or such as are much debilitated, are not enabled to take more than the half, or even the third of the quantity directed by Laffecteur. In some instances, they will not bear more than a table-spoonful thrice a day, without producing excessive alvine discharges. Laffecteur acknowledges the same effect himself, by directing, that should the rob produce more than three evacuations in the twenty-four hours, that its quantity should be lessened. We have ourselves observed, that its effects were most decidedly beneficial, when it regularly produced one or two free alvine evacuations daily, and would therefore propose that this effect should regulate its exhibition. Two or three ounces daily will, in the majority of cases, accomplish this end. We have no doubt that the syrup also increases the transpiration and the urinary flow; at least, this was found to be the case, from exhibiting the sarsaparilla in powder, though these effects were not nearly so evident as when the patient took conjointly a quart of the strong decoction daily. Besides these effects, the medicine exhibits tonic powers. Under its regular and continued use, the appetite gradually improves; all the functions indicate the existence of a moderate state of excitation, more especially those of nutrition, and the patient acquires a degree of vigor he had long been unaccustomed to, with a plumpness, sometimes even a state of fulness approaching to plethora. That the sarsaparilla is a mild tonic, is now generally admitted, and has of late been much employed with the best effects, in debilities of the digestive organs. A part, however, of the invigorating and nutritive effect of the remedy may be fairly assigned to its saccharine and mucilaginous properties. Were this not the case, a decoction of the sarsaparilla, which extracts all the active properties of the root, should be equally beneficial with the syrup, which does not accord with our observation. Neither, on
the other hand, will the syrup, without the decoction, produce the same good effects as when both are employed. In many obstinate cases it will even totally fail, the combined action of the two forms being necessary to bring about that change of system which is indispensable for the restoration of health. On the whole, then, we are of opinion, that the good effects of this medicine are to be attributed to its maintaining a very moderate and general excitement throughout the system, diluting its fluids, and accelerating the action of all the emunctories, especially those of the skin, kidnies, and digestive organs, and thereby eliminating the fluids that had become altered and vitiated, from the long irritation of morbid action; at the same time that it supplies a mild and healthy nutriment to repair the losses of these increased discharges.

"The low and abstemious diet enjoined by Laforteur during the treatment, we have never insisted on. Debilitated patients, who take two or three ounces of the syrup daily, with a quart of the strong decoction of sarsaparilla, which is as much as they can be induced to continue or they can bear, without oppressing the stomach, are not much inclined to overeating, and we merely advise them to refrain from stimulating drinks, and to take food that is nutritious, and of easy digestion."—pp. 46—48.

In conclusion, we have to express our thanks, in common with our brethren, to the Members of the Committee, who have presented us with these able and highly interesting Reports. We think them calculated to do essential good, both in and out of the profession, and to reflect no ordinary credit on the Society under whose sanction they are set forth. We hope the labours of the Committee will not rest here. There is an Augean stable before them, it is true, but it will be no difficult task, after their first successful attempt, to cleanse it thoroughly, and we hope effectually. The two last Reports are from the pen of Dr. CHARLES DRAKE.
QUARTERLY HISTORY

OF

IMPROVEMENTS IN MEDICINE AND SURGERY.

Foreign.

PATHOLOGY.

Chorea, Fatal.—A fatal case of chorea is so rare, that the dissection of a choreal patient is a treat to the pathologist. The following case occurred in the hospital practice of Dr. Hawkins, and is detailed in the March Number of the Medical and Physical Journal.

Case. Eliz. Smith, aged 17, was admitted into the Middlesex, on the 5th September, 1826, having suffered, seven weeks previously, from a severe attack of rheumatism, chiefly in the knees and shoulders. This had got better, and a fortnight before the date of her reception, she had been seized with involuntary convulsive motions in the legs, arms, and neck. These had continued ever since, with great violence. The catamenia had been suppressed for four months. She had now complained of head-ache, thirst, and pain in her back—pulse 96—tongue loaded—bowels constipated. Dr. Hamilton's plan of purgation was fully but unsuccessfully employed. The calomel, senna, turpentine, &c. never failed to dislodge copious and dark-coloured motions; "but they procured not the smallest alleviation of the convulsive spasms, which resembled those with which hydrophobia exhausts its victim." The unfortunate patient could not hold her head quiet for a single minute, and the grinding of the teeth was so violent as at last to force out the incisor teeth from the lower jaw. The convulsions were uninterrupted, except by short intervals of broken sleep. The intellectual faculties did not seem to be impaired. On the second night after admission, she was ordered into a warm bath, which measure, unfortunately, aggravated the convulsions, "and produced such an accession of irritation, and even of inflammatory symptoms that it was deemed necessary to take from her sixteen ounces of blood." The blood was inflamed. The bleeding was repeated on the following day, but produced very little alleviation of the spasms. After the failure of the purgative plan, a short trial was
given to musk, without any effect. Camphor and opium succeeded in procuring some sleep; but after the second administration of these remedies, she slept soundly—awoke, and soon afterwards expired, 13th of September.

Dissection. No morbid appearance could be discovered within the cranium. In the upper part of the lungs there were some tubercles of a large size, and several earthy concretions were deposited in various parts. There were some adhesions between the liver and surrounding parts—"intestines healthy in appearance"—omentum and mesentery studded with numerous cysts, some containing a black semi-fluid matter, others containing calcareous depositions. Several large concretions were also found in the substance of the pancreas. The uterus was rather large and vascular, and the lining membrane of its body and fundus highly injected. The fallopian tubes and ovaries contained a good deal of the black matter above-mentioned.

Dr. Hawkins observes, that, granting irritation of the brain and nervous system to be the proximate cause of chorea—"sufficient cause for such irritation was met with in the preceding case"—viz. the earthy concretions. We cannot accord in this opinion. Surely these concretions were not the product of three weeks, the date at which the convulsions began—and if they previously existed, which they certainly did, why did they not produce irritation? It is evident, indeed, that the dissection threw no light on the cause of chorea, and therefore we must still regard it as capable of being produced by irritation which leaves no cognizable trace of its existence in the dead body. Dr. H. does not say whether the mucous membrane of the stomach and bowels was carefully examined. From the state of the secretions and excretions, it is manifest that the digestive organs were in a very deranged state, and it would have been very desirable to have minutely investigated the whole internal surface of these organs; for there, we think, the source of irritation existed. From the numerous depôts of melanoid matters, in this case, we apprehend that this unfortunate girl would have ended her days under that terrible malady, melanosis, even had she escaped from the convulsions. Finally, we question whether this disease was fairly entitled to the name of chorea. Was it not more properly convulsions?—Johnson's Medico-Chir. Rev.

Broussais on Asthma.—M. Bonnez, assistant surgeon of the 10th regiment of Chasseurs, in garrison at Libourne, aged 36 years, had the imprudence to bathe in a river, after a hearty dinner, on the 18th of July. In the middle of the night he was seized with general malaise, succeeded next day by fever, head-ache, coryza, and cough. During the night of the 19th he had no rest. On the 20th the phenomena changed into a complete attack of convulsive asthma, (the second paroxysm which he had experienced, the first being three years before) and he then sent for his medical colleague. Ten ounces of blood were taken from the arm, and pediluvia applied to the feet. By these means the symptoms were relieved, and the night of the 20th was spent less miserably. 21st, the paroxysm returned, and con-
continued till near the evening. The anhelation this day was very distressing, and an antispasmodic julep was ordered, which augmented the dyspnœa, and brought on another paroxysm of asthma. The night was spent in a state of agitation. 23rd, Ipecacuan had been taken in small doses, and also castor; but the paroxysm returned this day, with as much violence as before. 24th, The asthmatic paroxysm came on at the usual hour, six in the evening. On the 25th, Dr. Bagard, was called in, and found the patient with the following phenomena:—dejected countenance—eyes sunk—breathing short—pulse small and quick—tongue coated—great tenderness at the epigastrium—oppression under the sternum—abdomen rather tense—urine scanty and high-coloured. Sixteen leeches were applied to the sternum and epigastrium, the bites to be encouraged by cataplasms—very low diet—diluents—lavenements. The succeeding paroxysm (26th) was very much milder, being only a simple dyspnœa. 27th, When Dr. B. visited his patient, the latter observed that he was quite well, and had a strong desire for food. But it was evident that the patient was not well.

At the usual hour, the dyspnœa returned, accompanied by some cough. 23th, Felt very well all day, till six o'clock, when the dyspnœa returned as usual. Dr. B. now being struck with the periodicity of the complaint, and seeing nothing wrong with the digestive organs, prescribed the sulphate of quinine, in doses of three grains every three hours. The next paroxysm was prevented. The remedy was continued for three days, and the patient was free from complaint. On the 6th August, however, when M. Bonnez thought himself in complete security, he was suddenly seized with pain in one side of the chest, with fever, cough, head-ache, &c. Cupping-glasses were applied to the side, and afterwards a large blister. But these means were of no avail. The symptoms became exasperated, and the sputa sanguinolent. When Dr. B. was again called to the patient, he found him with violent head-ache, acute pain in the right side of the thorax, intense fever, full pulse, burning skin, and countenance indicative of despair. It was now evident to Dr. B. that the inflammation had spread from the mucous membrane to the pulmonary parenchyma, and even to the pleura. Dr. B. advised the application of 25 leeches to the chest; but the regimental surgeon protested against any more leeches, and our author took his leave. Two other physicians were called in, and ventured on the abstraction of six ounces of blood from the arm. This made no impression on the complaint, and Dr. Bagard was recalled. He applied 25 leeches to the chest, which, with a blister, completely removed the disease.

M. Broussais' Remarks.—Most cases of Asthma depend on some obstacle to the course of the blood; and this obstacle is most commonly a disease of the heart. This, however, is not always the case. A determination (however induced) of blood to the mucous membrane of the lungs, in a sanguineous subject, will often give rise to a paroxysm of asthma, as was the case in the above instance. M. Broussais has known inflammation and irritation in the mucous membrane of the stomach and bowels induce a fit of what is called spasmodic asthma. The Professor ridicules the distinction
drawn between dry and humid asthma. Every asthma is dry at the commencement of the paroxysm, and the mucous membrane ultimately throws out a secretion which relieves the vessels of the lungs. In all cases, however, of asthma, M. Broussais avers that there is a congestion of blood in the vessels of the membrane lining the bronchia and air-cells, and that this should be looked upon as the proximate or immediate cause of the phenomena, and treated accordingly.—*Ibid*.

Chronic Diarrhoea.—There are many forms of this disease evidently dependant on ulceration or other organic lesion of the mucous membrane of the bowels, the consequence, or at least the sequence of dysentery. But there are some other cases of obstinate diarrhoea, where the disease goes on for years, and where dissection, after all, detects no organic change in the intestines. Dr. Baillie has described "a particular species of purging, which is but little known, and has generally proved fatal. The alvine discharges resemble a mixture of lime and water, with froth on the surface. It most commonly occurs in people who have resided in warm climates, and suffered from hepatic affections; but not exclusively in this class. When the disease is in a mild form, the evacuations are of the consistence of pudding, and of a pale colour. Under such circumstances, and especially if the motions be occasionally figured, the patients may live many years with the complaint. They have usually a sallow countenance—are thin, but not greatly emaciated—have tolerable appetites—white coated tongues. Nothing particular can be detected when the abdomen is examined by the hand. There is no tumour—no pain on pressure—but the bowels are generally distended with air. Dr. Baillie never had an opportunity of examining any patients who died of this disease, and therefore could not speak as to its pathology. But Mr. Wardrop, in a note to his edition of Dr. Baillie's works, informs us that he (Mr. W.) had an opportunity of dissecting a patient who had been under Dr. B's care for this complaint, and that he found considerable thickening of the coats of the rectum and colon, great contraction of the calibre of the gut, with small, but deep ulcers interspersed over its surface. Dr. Seymour and Mr. Arnott, however, have each had an opportunity of examining the intestinal canal in this complaint; but in these instances, there was no breach of structure or organic alteration of any kind in the large or small intestines.

We have been induced to notice this subject in consequence of a remedy which has been introduced of late by Dr. Elliotson, at St. Thomas's Hospital—namely, the sulphate of copper, combined with opium. This zealous physician has given the remedy in a considerable number of cases of chronic diarrhoea, where all, or almost all other remedies had failed, and with complete success, in every instance. The dose is generally half a grain twice a day, with half or a grain of opium, increasing the dose to two or three grains in the day, but seldom beyond that quantity. We understand that Dr. E. made experiments with the opium alone, which failed to cure the patients—and the reason why he combined it with the sulphate of
but.

Dr. E. is inclined to view the remedy in respect to its modus operandi as simply an astringent; but when we reflect on the power which this sulphate possesses of allaying irritability when applied to external sores, we shall be induced to attribute much of its success in these cases, to its action as lessening morbid irritability of the intestinal canal. But as Dr. Elliotson’s observations will probably soon be published, we shall defer any farther remarks till that period.—Ibid.

Milk with Urine.—The Memoirs of the Royal Academy of Sciences of Turin, (Vol. 19) contains a case by Dr. Canobio, in which milk was detected in the urine of a young female, mother of two children, and suckling the third. This extraordinary phenomenon did not affect either the child or the mother. A fourth delivery was succeeded by a similar result. An unexpected circumstance produced the separation of the mother from her infant, but the discharge instead of lessening, became more copious, and she was obliged to ask medical aid. The fluid when analysed was not found to differ from milk, except in a great excess of serum. Dr. Canobio could not detect either urea or the uric acid.—Ibid.

[From some excellent observations in the Edinburgh Medical and Surgical Journal, on the unmixed effects of Mercury on the system, written by Dr. Anthony Musgrave, the able author of a Treatise on the Yellow Fever of Antigua, which appeared in the ninth volume of the London Medical and Chirurgical Transactions, we extract the following practical remarks on some of the most important tropical diseases. They will every where be read with great interest, as the results of extensive experience, and the productions of a man of undoubted talents and skill.—Ed. of New York Med. and Phys. Journal.]

Yellow Fever.—In the more concentrated form or higher grade of fever, as it affects Europeans, which has acquired the common denomination of Yellow Fever—I mean the continued, and, if I may be allowed the expression, the more open type, (such as prevailed in Antigua in 1816, and of which a history, sketched for the information of my much respected friend Doctor Ferguson, has been long before the public,)—my experience leads me to believe, that mercury, administered with a view to the saturation of the system, may be judiciously dispensed with; and an opinion to this effect, which I have since seen no reason to alter, will be found in the article alluded to. In cases like these we find the heat to be intense and general—the arteries, as far as the finger can trace them, have their calibre fully distended, showing the blood to be equally distributed among their extreme ramifications. In a word, we have to rescue our patient from urgent inflammatory action, not to obviate the more insidious, but not less destructive consequences of congestion.
The immediate and rapid abstraction of blood from the arm, or temporal artery, or both, to an extent to be limited, less by the quantity, however large, than by its decided effect upon the circulation, as deduced from that degree of faintness which is accompanied by copious and general perspiration; active purgative combinations, into which calomel must liberally enter; and the external application of cold water, under the form of affusion or sponging, with occasional aid from the razor and blisters, are here to be mainly depended upon, and will, in nine cases out of ten, prove sufficient to save our patient, when employed within twenty-four hours from the attack. But we are liable more frequently to a form of fever, peculiarly calculated, from its masked approach, to lull the patient into mistaken security, and thus to baffle, in its subsequent progress, the best directed efforts of our skill; and this form is undoubtedly treated with greatest success by the rapid induction of ptyalism.

Malignant Intermittent.—Sporadic attacks of a more or less deceitful type are indeed annually to be met with in some of the low swampy situations with which Antigua unfortunately abounds; but, towards the close of 1823, an epidemic of this kind appeared to an extent which spread the utmost consternation among all classes of inhabitants; for, singular to say, it evinced no predilection as usual for our European visitors. The whites, the coloured, and the blacks, males and females, infancy and old age, were alike susceptible of the malignant influence of the air, although that influence might be exerted with various degrees of intensity.

The disease was commonly ushered in by a mild intermittent paroxysm of brief duration. The chilly fit, occurring generally at bed time, was succeeded by moderate heat, and this again terminated by sweating towards morning; so that, among the planters, for example, who were the principal sufferers, the patient would rise at daylight, take his breakfast as usual, and proceed to his accustomed occupation, without attaching the slightest importance to the indisposition of the night. The same would be repeated on the following evening with a similar solution of a rather aggravated paroxysm. But the third return, although commencing as before, would speedily be followed by some marked derangement of the sensorium, which was probably the first signal for demanding medical advice. The individual was then commonly found talking wildly, with the heat concentrated about the head and trunk; the extremities cool, and covered with a greasy dampness; the pulse at the wrists extremely quick and small; respiration hurried; tongue brown and dry, or covered with a frothy slime; but the stomach generally retentive. Black vomit, as far as I know, was never observed; and discoloration of the surface with hemorrhage in one case only.

These symptoms too often advanced with rapid strides to their termination in death, preceded by low delirium, or coma; sometimes within forty-eight hours, generally before the close of the third day from the last accession, which completed five from the first moment of complaint. Life was
rarely protracted beyond this period without ultimate recovery, although convalescence might be occasionally tedious.

Such, in broad outline, were the prominent features of this singular modification of endemic disease—we must call it a malignant intermittent—in which so little resemblance can be traced to the yellow fever of authors. I have no difficulty, however, in regarding it but as an opposite degree of the same continuous scale, modified by agency which is beyond our ken,—for, although I have roughly delineated the phenomena exhibited by a very great majority of cases, here and there an example did occur in European habits of a form either continued ab initio, or preceded by one slight paroxysm only, and yielding to the vigorous treatment I have already described; and, among the slaves, we had an opportunity of observing every variety of the simple intermittent, which mingled itself by almost imperceptible gradations with the reigning epidemic.

I ought long ago to have recorded a full detail of the origin and progress of this visitation, which extended from October 1823 to January 1824; but what I have now said will suffice for my present purpose, which is merely to convey some slight idea of the kind of fever which I hold to be the proper subject of mercurial treatment. On this occasion indeed I am persuaded, that where no assistance was obtained, as was too frequently the case, till after the third and dangerous paroxysm was established, any improvement which subsequently took place was chiefly to be ascribed to the operation of this mineral; nor am I aware of a single recovery, under these alarming circumstances, where recourse had not been had to its use. By its unrivalled power in equalizing the distribution of blood, the accumulated mass, lying stagnant in the almost palsied organs, was gradually put in motion. These organs, consequently, resumed their suspended functions; the wonted secretions were again established, and, being copiously poured forth, the system thus became relieved from an overwhelming oppression. Such at least appeared to me to be the modus operandi in favourable cases. Salivation I regarded as an indication of the full action of the medicine, and therefore hailed it as the harbinger of good. I did not, however, believe it to be necessary to success,—nay, I could have wished it excluded from its effects; and, under this impression, I never failed to expunge the mercurial from my prescriptions as soon as the rising of the pulse, and the incipient restoration of heat to the extremities, gave me reason to conclude that the object at which I aimed was about to be accomplished.

Calomel was the preparation generally resorted to by all classes of the profession, upon the principles, under the restrictions, and in the doses laid down by Chisholm and Johnson; and, before ptyalism was set up, which is so much insisted upon by these authors, seldom less than one hundred, often hundreds, of grains were accumulated in the system. In my own practice, I found that a liberal addition of camphor economised the quantity of mercury, not only by accelerating its effects through a stimulus at once general to the system, and local to the mouths

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of the absorbents along the digestive tube, but also by exerting over the pungent and griping effect of calomel a controlling power second only to that of opium, if indeed it be not altogether equal. My common prescription, therefore, after unloading the bowels, was two scruples or half a drachm of calomel, with half a drachm or a scruple of camphor, divided into twelve pills, and of these two were directed to be taken every second, third, or fourth hour, till some marked improvement was observed. No practitioner, however, who deserves the name, would blindly pursue one determined system in the teeth of conflicting indications; and it is therefore scarcely necessary to state, that this plan was in each instance modified or assisted internally by such of the simpler articles of the materia medica as circumstances seemed to render advisable; and that externally the warm bath and frictions, blisters and sinapisms, were assiduously called in aid for the purpose of soliciting the blood from the viscera to the surface. But I must not omit some special notice of the lancet and bark, lest I become amenable to a charge either of ignorance or neglect.

After many successive deaths had rendered the alarm general, and application was made for assistance at the first onset of the disease, a single bleeding, to its fullest effect upon the circulation before the orifice was closed, was uniformly successful either in at once putting the symptoms to flight, or in so modifying their subsequent character, that the identity of the attack with the prevailing epidemic was hardly to be recognised. At a later period, too, advantage appeared sometimes to follow venesection, or, more frequently the abstraction of a few ounces of blood from the temporal artery in urgent affections of the head; but, taking the sum of my experience on this and other occasions, I could wish to make it the means of impressing upon my junior brethren in the West Indies, that much danger is incurred by using the lancet too hastily after fevers of any kind have at all advanced in their course. It is further of essential importance to remark, that, when the type under review is the subject of treatment, and the propriety of bleeding is considered with reference to the duration of the disease, this duration must be reckoned, not from the last chilly fit which ushered in the persisting symptoms, but from the first intermittent paroxysm, however slight it may have seemed to the patient; for by the latter, which is the correct computation, the third, fourth, or fifth day may have arrived, before a careless observer would suspect that any thing like serious indisposition had commenced. When matters have unfortunately gone thus far before we are made aware of the real danger of the attack, it is now my steady conviction, that it will be invariably more judicious to confide the safety of our patient to calomel and camphor, with due regard to purgatives and external adjuvants, than to risk an attempt to move the supervening congestion, however menacing, by bleeding. The indications at this period are beyond measure fallacious; and, if a vein be imprudently opened, it will too probably happen that the distress, whether general or local, which prompted the measure, may indeed appear to subside, and the practitioner be induced for a time to congratulate himself
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on its success; but, before or soon after the arm is tied up, a copious sweat will break out, which, becoming more and more profuse, with a corresponding sinking of the pulse, the patient will expire within twenty-four hours, in perfect possession of his mental faculties, and complaining of no sort of uneasiness beyond that which is inseparable from dissolution. I could wish it to be also remembered, that the same unexpected sinking may be the consequence of venesection, even at a much earlier period of intermittent fevers, provided a spontaneous solution of the paroxysm be on the eve of taking place; for I have seen more than one remarkable instance where the constitutional effort to throw off the heat by perspiration, co-operating unluckily with the powerful relaxation which follows the loss of blood, proved sufficient to reduce the patient to an alarming and even irretrievable state of exhaustion.

It is doubtless difficult to understand— to me it appears nearly inexplicable— why a cause, which dissection afterwards shows to have operated by a process of local disorganization, should, in the first instance, manifest its action under the mildest and most harmless form of fever, with periods as far as the eye, the touch, and questions can detect, of complete intermission; and yet that the progress of the structural mischief—if we may judge from the aggravation of each successive paroxysm, and the sometimes inconceivably rapid termination of the last in death—should continue, without interruption, during these apparent cessations even of functional disturbance. Perhaps, too, it is not the least surprising fact connected with this point, that bark, a remedy to which we are in general so little disposed to commit visceral inflammation, should, under such circumstances, manifest its accustomed power; for whenever we had an opportunity, during the epidemic under consideration, of putting this power fairly to the test, we certainly had no reason to be dissatisfied with the result.—Three cases I particularly remember, in which the paroxysms, (not congestive, however,) continued to occur after ptyalism was distinctly brought on, and yielded at last, or appeared to yield, to a drachm of the powder given in a wine glassful of the decoction, as often as the stomach could bear the dose, during the absence of fever. Unfortunately we had not then procured the sulphate of quinine, of the superiority of which over every other preparation, I have since obtained highly satisfactory proofs, by extensive trial of its effects.

Elephantiasis.—An inexperienced practitioner, who sees this complaint in its acute and early stage, would have some difficulty in conceiving it to be the first link in that chain of morbid alterations of structure, which terminates at length in the unseemly Barbadoes leg—the bucnemia tropica of Mason Good. Its first invasion—and the accession may be repeated under a similar form for a considerable period—is announced by very severe rigors, speedily followed by febrile heat, so pungent, that I have often been able, from these circumstances alone, to predict the supervision of the distinctive inflammation, even when the individual had never before been
subject to its attacks. This inflammation, sooner or later, within forty-eight hours, (if not primarily affecting the viscera,) betrays itself in the scrotum, the mamma, or some part of the extremities, most frequently about the ankle, or high up the thigh among the inferior glands of the groin.

Although commonly circumscribed at first, it not unfrequently diffuses itself over the whole limb, or even extends to the contiguous surface of the trunk; and when the glands themselves are not involved, indurated cords, extremely painful to the touch, can be traced to the nearest cluster. But whatever may be its original seat, the patient is never secure while the constitutional disturbance subsists, from a sudden retrocession to some vital organ. I have seen it, in the same case, translated from the scrotum to the head; from thence, after a few hours, descend with the rapidity of lightning to the abdomen—again migrate to the chest, to return perhaps to the encephalon, and prove fatal there; or, under more favourable circumstances, resume its comparatively harmless situation, and run its subsequent course as if nothing untoward had occurred; and, while occupying the different cavities, giving rise to the ordinary symptoms of acute inflammation of that particular viscus which it had selected for its temporary abode.

Now, long before my time in the West Indies, the best informed practitioners had ascertained, by experience, that, in addition to warmth locally applied, and the ordinary purgative and febrifuge medicines, mercurial saturation of the system was the best means of securing the patient against this erratic disposition; and accordingly, ptyalism was the usual companion of convalescence from an attack of this very common complaint.

As all young men ought to do, who have not unexceptionable motives for an opposite line of conduct, I adopted the practice of my seniors, and have never had cause to question the correctness of their conclusions; for I remember no case of fatal metastasis after swelling of the gums had been unequivocally observed; a subsidence of the constitutional symptoms having invariably either preceded, or been simultaneous with this effect even when the local inflammation has continued a course which terminated eventually in suppuration. I am, indeed, strongly disposed to believe, that, since the mercurial treatment has become general, the number of cases ending in a local and permanent deposition of lymph, has been materially lessened; as I could name many individuals subject to this disease, affecting the leg, the thigh, or the scrotum, whom I have attended for a number of years, and who yet continue to shake off each successive return, without retaining the slightest trace of its having existed; or, at worst, with a trifling induration of the inguinal glands. One excellent gentleman I have particularly in view; because his life being infinitely valuable to a numerous family, the case gave me more than ordinary anxiety. I found it necessary to subject him to the influence of mercury, twice or thrice annually, from my first arrival in Antigua, for attacks of this kind, placing his life in jeopardy by their sudden transition from the groin to the head or
abdomen: But, up to the time of my leaving the island, he nevertheless remained exempt, during the intervals, from the usual indications of this unlucky diathesis; and what is more, without either nodes or bone-aches. This must be deemed peculiarly fortunate in the case of a married man; as, otherwise, injurious doubts might have arisen, whether occurrences so suspicious were to be attributed to me, or not rather to indiscretions of his own.

Before leaving this subject, it may be proper to remark, that after experience had given me confidence, I was induced, when either of the great cavities was implicated, to have recourse to the lancet more boldly than was sanctioned by some of my brethren, whose opinions I respected; their objection being founded on the idea that inflammation was the erysipelas, and, therefore, prone to assume under depletion a low gangrenous character. But, to say truth, even admitting the force of an objection, which is now, I believe, but little regarded, I am by no means quite sure that the phlogosis in question bears the supposed analogy to erysipelas. At all events the redness differs little from that of phlegmon, and suppuration under the form of genuine abscess is an extremely common occurrence; while, on the other hand, external gangrene is rarely, and vesications are almost never observed.

Tetanus—another most important disease, in which, after a greater share of experience than I wish to have again, of almost every mode of treatment which has been proposed, I have for some years placed considerable reliance on large doses of calomel, in combination with opium and camphor, preceded by copious blood-letting, when not forbidden by circumstances, and aided by active purgatives, and the external treatment which I shall immediately have occasion to mention. During the course of my professional career I have had the satisfaction to see numerous recoveries from the most aggravated degrees of the traumatic form of this complaint. Whether post or propter, with reference to the remedies employed, it may be competent to any man to question. But when we contemplate, without prejudice, the Herculean weapons which have been wielded in these struggles, between the physician and the disease, if we are sceptical enough to doubt their agency in the cure, we cannot choose but wonder that they failed to kill.

As a recent example of the practice to which I allude, and of its occasional, I would I could say its general success, I may sketch the case of a stout young negro, John Dickman, a slave of Captain Thomas Clark.—This man, in the course of his duty as a seaman, on board a small coasting-vessel or drogher, had his right hand extensively lacerated by a halyard drawn through it with great velocity, by the accidental falling of a heavy weight, to which the opposite end of the rope was attached. The flexor tendons were denuded and severely bruised, and the distal phalanx of the middle finger was forcibly torn away. Tetanic symptoms super-
vened on the tenth, and assistance was demanded on the eleventh day from the accident.

The patient fell chiefly under the care of Dr. Furlonge, who then practised with me, but was often seen by myself. He was bled twice to syncope on the first day; and a blister was afterwards applied, extending from the sacrum to the occiput, and was not allowed to heal. The wound, after a free division of all partial adhesions, was dressed with equal parts of the oil of turpentine and laudanum, applied on caddis, which was frequently changed, and covered with a large warm poultice; and frictions were diligently instituted about the jaws, the neck, and epigastric region, with a strong anodyne liniment, or powdered opium, rubbed up into an ointment with lard. Active purgatives (such as the Ol. Terebinth, when the powers of deglutition permitted; the pulvis jalapæ comp. with croton oil, suspended in cinnamon water, or castor oil following upon an uncombined $\frac{3}{4}$ of calomel,) were also occasionally interposed, and quickened, when necessary, by stimulating glysters. But the prescription which was assiduously persevered in, from the 6th to the 15th of the month, (or for ten days inclusive,) was $\frac{3}{4}$ of calomel, $\frac{2}{3}$ of camphor, and $\frac{3}{4}$ of opium, with the due proportion of conserv. ros. divided into six boluses, of which he took one at various intervals, ranging from one to four hours, according to the urgency of the spasms, till he had consumed the amount of ten such formulae; and, adding the quantity given with the purgative medicines, I find, on consulting my notes, that 670 grains of calomel were prescribed for this man, within the short period I have specified. Some allowance must doubtless be made for waste in administering the boluses, in a case where the difficulty of swallowing was sometimes as alarming as inconvenient, from the violent spasms which convulsed the muscles about the throat. But a more resolute fellow I have never had occasion to treat. I have seen him pause over a dose till he was enabled, as it were, to take the spasms by surprise, and then suddenly gulp the bolus with success; and in this way an enormous accumulation must, after every deduction, have taken place in the system. Yet, it is very remarkable that, while reckoning at best upon a frightful ptyalism as soon as the constitution had resumed its obedience to ordinary impressions, I was both delighted and beyond measure surprised to find, that perfect recovery was established, without even a swelling of the gums.

Observations on Mercury.—As the judicious interposition of the lancet renders the system more obedient to the influence of mercury, so undoubtedly does mercury, in combination with antimony and opium, obviate the necessity of recurring again and again to the lancet; and hence, by skilful management, we can secure to ourselves the co-operation of "the right and left hands of medicine," so that they may be made mutually to spare each other, by giving and receiving assistance in opposing the ravages of acute disease. This is indeed an advantage of the highest importance, for I know of no practice more fraught with peril to the patient than that
of reiterated bleedings. No man who has been accustomed to meet me at the bedside will be disposed to question my firm reliance on the salutary powers of venesection, when prescribed at proper stages. Few, perhaps, have drawn larger quantities of blood than I have within a given period. Yet I unhasteningly express my conviction, that in enteritis, pneumonia, and (with reference to this last point) I may add apoplexy and injuries of the head, many an individual has been hurried to the grave merely because the student is taught that blood-letting is the sine qua non, the unicum remedium on those occasions, and therefore, on entering upon practice, knows not what else to do. Surely, after having emptied the vessels to a reasonable extent without success, we can at worst only lose our patient by giving nature a little play, whereas, by farther interference, we shall too probably be at once deprived of all chance from her vis medicatrix, which ought never to be held in contempt. Several times has an unlucky third or fourth bleeding appeared to me to accelerate and enfeeble a tolerably steady pulse to a degree from which it has gradually proceeded to entire extinction; and, although the effects of this kind of exhaustion have presented themselves to me under a form somewhat different from that which has been described by Dr. Hall, I am still gratified to observe that the attention of the profession is likely to be more pointedly turned, by his remarks, towards a species of danger which has been hitherto not sufficiently appreciated.

But I have dilated too largely upon the diseases which have already passed under review, and it therefore becomes necessary that I now bring the list to a close, by comprising in few words, that in dysentery, rheumatism of every kind, and all acute inflammations, whether of the head, chest, or abdomen, which assume a menacing character, calomel and opium, with emetic tartar or camphor, or both, are very commonly relied upon after, or in conjunction with bloodletting, purgatives, and blisters; and that the tropical practitioner, who is unacquainted with the influence of alternative doses of mercury over those ill conditioned sores (not venereal) to which the slaves are occasionally liable, is ignorant of the most effectual means of affording relief to a very important class of his patients. With such doses, and a regulated diet, these ulcers will yield to the simplest dressings;—without them, the pharmacopoeia chirurgica may be exhausted in vain.

I believe you are aware that in my part of the world we have no professional distinctions. We are all of that class which, in Great Britain, would be denominated general practitioners, that is to say, we prescribe, we amputate, or have recourse to the forceps or crotchet as occasion may require; with this disadvantage, however, that, in obscure or difficult cases, we are without appeal to those who have exclusively devoted themselves to either branch of practice. This state of things obliges each member of the profession to keep an establishment for dispensing his own prescriptions; and it hence occurred to me, as soon as my thoughts had been turned to this subject, that I might render the weight of my individual testimony respecting the unmixed effects of mercury on the system
more definitely appreciable, by ascertaining the quantity of its different preparations actually consumed by my own patients, or those of my partners or assistants under my immediate inspection, from the time of my first embarking in practice to the present day. I accordingly wrote to our druggists, Messrs. Gordon and Graham, of Oxford Court, Cannon Street, London, with whom I have corresponded during the whole period, requesting a reference to their books, and a memorandum of the amount of their shipments to Daniell and Musgrave, to myself, and to the existing firm of Musgrave and Crichton; and, by their letter of the 10th of April, I find that, from the latter end of 1814 to the year 1826, they have actually supplied, to these several addresses, 111 pounds of calomel, 61 ½ of blue pill, and 131 of mercurial ointment; the average consumption of the last four exceeding, as might have been anticipated, that of the eight preceding years; being about twelve pounds annually of calomel alone. It must be remembered, besides, that my experience has been by no means confined to the quantity dispensed in my own establishment, for I have always been a good deal engaged in the cases of others; and indeed, for many years, the consultations throughout the island have been almost entirely divided between my friend and partner Dr. Crichton and myself, both before and since the junction of our interests, which took place in January, 1825.

Looking, then, upon the formidable catalogue which I have thought it advisable to submit for consideration, with the evidence now adduced of the quantities of mercury I have seen expended in treating the diseases which this catalogue embraces, can you hesitate to concede to me a right which you would, doubtless, in my place, claim for yourselves—that, namely, of inferring—if not the absolute impossibility—at least the extreme, the almost inconceivable rarity of occurrences which could altogether have escaped the most watchful observation during the period, and under the circumstances to which this letter refers? And assuming a concession which cannot, I apprehend, be consistently withheld, may I not confidently go farther, and ask of those who believe in the pernicious influence of mercury on the bones and their periosteum, the throat, and the skin, how this belief is to be squared with the assertion which I now unequivocally make,—in terms and by facts which court publicity, in order that they may be rebutted, if possible, by the testimony of others,—that I have never either seen or heard of a case where symptoms, bearing the stamp of secondary syphilis, in the common acceptance of these words, were even suspected to be the offspring of mercury administered for the cure of any other disease,—that the only bones I have ever seen, either immediately or ultimately, affected by the most aggravated cases of mercurial mismanagement, were those of the upper and lower jaw, whose vitality might have been partially destroyed by a process of denudation, caused by extensive sloughing within the mouth, which involved their periosteum,—and that the sole injury I have had occasion to notice after recovery from excessive ptyalism, which could even by supposition be connected with any but the two bones I have mentioned, was on one occasion a paralysis of the por-
tio dura of the right side, producing that peculiar effect upon the countenance, so well described by Mr. Bell? This paralysis, however, evidently arose from the thickening of some portion (probably the lining) of the canal, through which that nerve passes from within the cranium to the face, caused by inflammation extending to it by direct continuity of parts.—Edinburgh Med. and Phys. Journal.

MATERIA MEDICA AND CHEMISTRY.

On the Composition of certain Black Vomitings and their analogy with the Black Matter of Melanosis. (Journal de Chimie Medicale, Septembre 1826.)—M. Lassaigne has recently analyzed with great care the black matter vomited in a case of scirrhous ulceration of the stomach, and has found that its colour, as was conjectured by M. Breshet, is owing to blood, altered in its properties nearly in the same manner as in melanosis. The patient had long been evidently affected with scirrhus of the stomach, was seized lately with profuse vomiting of a black fluid, and after death the whole pylorus was found scirrhous and ulcerated, with an aperture communicating with the cavity of the third curvature of the duodenum.

The matter vomited had a chocolate brown colour, and held in suspension darker-coloured flocks, which gradually fell to the bottom, leaving a reddish-brown fluid, resembling a solution of altered blood. The fluid was acid, but gave, by distillation at a low heat, a very alkaline liquid containing much ammonia. The residue was strongly acid, gave out much ammonia with potash; yielded to alcohol a solid acid possessing the properties of the caseic acid procured by Proust from old cheese,—a fluid acid, which M. Lassaigne pronounces to have been the lactic, but which, according to the late corrections of Berzelius, the discoverer of that supposed acid, must have been modified acetic acid,—and a little osmazome; and the residue after the action of alcohol consisted of a principle intermediate according to M. Lassaigne between mucus and albumen, but which, from the properties he mentions, appears to have been casein. The dark flocculent matter was evidently altered blood, for weak sulphuric acid acquired a reddish-brown colour when gently heated with it; the solution yielded with ammonia reddish-brown flocks, which when dried, resembled exactly the dry colouring matter of the blood; the alkalis acted on the original flocculent matter as on blood; and when incinerated, it gave distinct indications of the presence of oxide of iron and phosphate of lime.

The analogy between the sediment of the matter vomited in this case and the black matter of melanosis, is therefore very great. The presence of the caseic acid has not to our knowledge been remarked in any of the natural solids or fluids, and consequently, as M. Lassaigne suggests, it appears to be a pathological formation.—Ibid.

Adulteration of Sulphate of Kina with fatty matter, and the mode of detecting it. (Journal de Chimie Medicale, Septembre 1826.)—The sulphate of kina is now so completely established as an article of the Materia
Medica of France, Italy, and Britain, that it is not only prepared in these
countries in large quantities from bark, but is also imported ready made
from the new world. Its value can no longer be called in question. It is
of great consequence, therefore, to secure the practitioner and the drug-
gist against its adulteration, which unfortunately is too easy to accomplish
and not always easy to detect. The adulteration we have to notice was
discovered by M. Chevallier of Paris. The adulterating substance was
stearine, one of the component principles of most fatty matters, the crystal-
line form of which resembles very nearly that of the sulphate of kina: and
the proportion in the article was eight per cent. M. Chevallier suspected
the presence of some foreign substance in consequence of the taste being
not only bitter, but likewise acrid, and irritating to the throat; and he sub-
sequently found, that, when gently heated in a silver spoon, the crystals
yielded a fluid which concreted by cooling, and was evidently greasy. He
afterwards found that this portion possessed all the properties of stearine.
The method he recommends for detecting this adulteration is a very simple
one. Diluted sulphuric acid rapidly dissolves the sulphate of kina, and
leaves the stearine, which may be collected in a concrete cake by heating
the mixture short of the boiling point of water, and then allowing it to cool,
when the stearine will concreted on the surface. This process will also de-
tect other adulterations with some acidular crystalline bodies of the animal
and vegetable kingdoms. There is a very easy kind of adulteration, howev-
er, which it will not detect,—namely, that with the aciculad crystals
of sulphate of lime formed from an acidulated solution of that salt. This is
easily detected by the residue left after incineration. The sulphate of kina
is of course wholly dissipated by incineration.—Ibid.

Poisonous Matter in Offal.—In the April Number of the Med. and Phys.
Journ. Mr. Brodie has stated three cases where a remarkable train of local
phenomena followed the handling of offal. We shall give a summary view
of these cases.

Case 1. A healthy young man cut his fore-finger, while engaged in feed-
ing dogs with sheep's offal. The wound healed in two or three days; but
then the end of the finger was found to be inflamed and swollen, as far as
the second joint—extending slowly over the first phalanx—up the outside
of the hand, as high as the wrist, then downward over the middle finger—
again upwards on the palm of the hand to the wrist—and lastly downwards
over the whole of the ring-finger, and the first phalanx of the little finger.
The inflammation was marked by deep redness of the skin, with slight	umefaction and tenderness. His general health was unaffected. The com-
plaint ran a course of six weeks, and then disappeared without any medi-
cal assistance.

Case 2. A cook at an hotel scratched his finger with the extremity of a
rib, while eviscerating a hare. In two or three days inflammation occurred,
and extended up the finger to the back of the hand, and thence downwards
over the adjoining finger, and so on, leaving one part as it invaded another.
It was three weeks after the accident when Mr. Brodie saw the patient. The inflamed parts were of a crimson redness, and rather painful and tender on being handled. The health was unaffected. Leeches had been several times applied, but without benefit. Mr. B. prescribed some local applications, which appeared to do little good. The oxymuriate of mercury, in doses of an eighth of a grain, was then given twice a day. In three weeks the redness and swelling had much abated; but there was considerable pain in the hand, extending along the fore-finger. One drachm of the powder of sarsaparilla was ordered thrice a day, in addition to the oxymuriate. In a week of this treatment, the inflammation had nearly disappeared, a numbness and pain remaining; which extended up to the shoulder. This continued for two weeks longer, and then subsided.

Case 3. A woman pricked the middle-finger with a splinter of bone, while cleaning the inside of a hare previously eviscerated. On the following day there was slight inflammation, which increased during the succeeding week, attended with pain and sleeplessness. One week after the accident, Mr. Brodie saw the patient, the whole of the middle-finger being then inflamed and swollen, the skin tense and shining. The patient complained of tingling and throbbing pain, which prevented sleep; but there was little or no disturbance of the general system. One-eighth of a grain of oxymuriate of mercury was prescribed, bis die, and the application of a poultice. In eight or ten days the inflammation was checked, and soon afterwards disappeared.

We think that these cases go to show that there is absorption of a morbid poison or septic principle, analogous to what we see in dissection wounds, though on a minor scale of virulence.—Ibid.

MEDICAL JURISPRUDENCE AND POLICE.

On Poisoning with the Sulphurets of Arsenic. (Journal de Chimie Medicale et Journal de Pharmacie, passim.) Several memoirs have lately appeared in the Parisian Journals on the subject of poisoning with the sulphurets of arsenic; and as they explain some facts which have long appeared unintelligible, we shall present a condensed view of the whole. Till very lately it was believed, that, as the artificial sublimed sulphurets are much more poisonous than those of natural origin, some essential difference existed between them in chemical composition. M. Guibourt, however has completely shown the cause of the differences in their physiological effects. For he has found that the artificial sulphurets always contain a large proportion of oxide of arsenic, sometimes so much as 96 per cent. This observation has been more recently confirmed by M. Courdemanche; and we may add that we have seen the cakes of sublimed orpiment lined on their concave surface with octaëdral crystals of the oxide. M. Guibourt, on the presumption arising from this difference, and from the known harmlessness of arsenic in its metallic state, ventured to hint, that the proper sulphurets, such as the native sulphurets, and that procured by transmitting sulphuretted-hydrogen through a solution of the oxide, are not
deleterious. But Orfila has contradicted this statement by positive experiments. He found that when 40, 60, or 120 grains of the pure artificial sulphuret procured by precipitation, or of the native orpiment of Hungary, or the native realgar of Transylvania, were introduced into the stomach, or into the cellular tissue of dogs, death took place in two, four, or six days, under the usual symptoms of poisoning with arsenic. It is certain, therefore, that the sulphures of arsenic, when perfectly pure, are poisonous; but they are much less so than the oxide. Their poisonous power appeared a remarkable and anomalous fact, considering that metallic arsenic has been proved not to be poisonous in its pure state, or when alloyed with tin, or when combined with iron and sulphur in the ore mispickled or arsenical pyrites. But the anomaly has been accounted for by M. Courdemanche, who finds, (Jour. de Pharm. Mai, 1827,) that if the pure sulphuret of arsenic be boiled even in distilled water, a part of the water is decomposed, sulphurretted-hydrogen is evolved; and the white oxide of arsenic is formed and remains in solution—that this change takes place in the cold, but much more slowly,—and that it is very much accelerated by the presence of vegetable or animal principles in the water. In all likelihood then, the sulphures are poisonous merely because they are in part converted into the oxide. These observations will also account for the statements of Hahnemann regarding the solubility of the sulphures of arsenic in water. They are insoluble as sulphures, but will lose weight by boiling, because they are decomposed.—ibid,

Poisoning by phosphorus.—(Mem. de la Soc. Med. d'Emulation. Tom. IX.) On the 24th April 1824, a young man, 28 years of age, swallowed half a grain of phosphorus mixed with very hot water. Feeling no effect, he took three days after a grain and a half in the same vehicle at a single dose. He breakfasted almost immediately after, and experienced no remarkable symptom till five, when he had no sooner swallowed some food, than he complained of violent pains of the stomach and belly. These were soon followed by incessant and painful vomiting; and abundant discharges from the bowels during the night. On the following day these symptoms were aggravated by violent contractions of the belly. Emollient injections produced neither excretion nor relief. The patient, however, followed his ordinary pursuits; and it was only on the 4th of May (after a full week) that he communicated to M. Worbe the circumstances of his complaints. The epigastrium was then extremely painful to the touch, the abdomen was very tense, and its muscles strongly contracted; and he was unable to continue out of the horizontal posture. The features had an expression of sadness, languor, and wavering; the eyes were heavy, and the conjunctiva and skin of a strong yellow tint. The respiration, however, was natural, the pulse was only a little hard, and the tongue and mucous membrane of the mouth were unchanged. Membrana generationi inservientia necquaquam affecta. The remedies were leeches to the epigastric region, the warm-bath, fomentations, and emollient cataplasms, mucilaginous injec.
tions, and for drink gum-solution in abundance. The leeches were not applied till noon. At ten in the evening the patient was delirious, convulsed, and unmanageable, but carried his hands instinctively to the epigastric region. A physician summoned at seven the next morning ordered to each elbow fifteen leeches, which procured a good deal of blood. M. Flourens, introduced by M. Worbe, recommended leeches to the head; and they were accordingly applied. The condition of the patient, however became hourly worse. The urine escaped involuntarily; the alvine discharges became frequent and copious, with flabbiness of the muscles; the beats of the heart became weak, and those at the wrist were no longer perceptible. The surface, which was now intensely yellow, became covered with a cold sweat, which was most abundant on the forehead; the extremities became cold, and death took place at three in the morning of the 6th, the second day of his application to M. Worbe.

The external appearances after death were, yellow tint of the skin, the cutaneous veins of the belly and upper part of the thigh prominent, and the skin of these parts checkered with livid spots, sugillations, and venous impressions. The scrotum was bluish and phosphorescent, according to the observation of M. Bogros. The chest contained much blackish serous fluid; the lungs were gorged with blood; the heart was soft, collapsed, and contained little blood. The muscular tissue only of the stomach was inflamed; the other membranes of the stomach and duodenum were pale and flaccid, and gas was developed in their submucous cellular tissue. The cardiac and pyloric orifices presented black or rather slate coloured patches which might be compared to the blood-shot spots seen on the conjunctiva. All the intestines were tympanitic, but contained little fluid. The bladder was sound, and contained four ounces of urine. Permission to examine the brain could not be obtained.

M. Worbe and M. Bogros killed two dogs, one of 7, the other of 13 pounds weight, by giving the first half a grain, and the second a grain and a half of phosphorus dissolved in hot water. In the former dog the cardia and pylorus presented the black spots observed in the stomach of the subject above-mentioned, but the brain and its appendages were sound. In the second several ecchymosed spots were found in the cellular fat, contiguous to the base of the ventricles of the heart, and the surface of the uddicles. The villous membrane of the alimentary canal, especially that of the stomach, was folded or contracted, and easily detached; and the tube was abundantly filled with blackish matter, as far as the cæcum. The veins of the brain were filled with black blood; the membranes were injected, and the pia mater was ecchymosed.—Ibid.

Statistical Account of the Lunatic Asylum at Aversa in the kingdom of Naples. (Archives Generales de Medecine, Octobre 1826.)—M. Esquirol has published from documents supplied by Dr. Latrillo, one of the resident physicians of the Lunatic Asylum at Aversa, an interesting account of many particulars relative to the Statistics of Insanity as it prevails in the
kingdom of Naples. The documents embrace a period of ten years, from 1814 to 1823 inclusive. The following are the principal results at which M. Esquirol has arrived on comparing the reports of Aversa with those of other European asylums.

The number admitted in ten years was 1725, or 172.4 annually, which is a much less proportion to the population than is observed in France and England. The males were to the females in point of number as five to two: in France the proportion of the sexes is nearly equal: in St Petersburg and Moscow it is as five to four. These facts show that it is not the climate which renders insanity less frequent among females in Naples, but their inferior importance in society, and consequently a less frequent exposure to the moral causes of the disease. The season during which the admissions have been most frequent is midsummer, and the months immediately preceding and immediately following, namely, May, June, July, and August. This result accords with what has been observed in France and England. Among the causes the first noticed is hereditary tendency. This appears, however, to be a very rare cause in Naples, for, if the records are correct, only 20 cases of the 1725 were cases of hereditary insanity. Fever is a very common cause in that country. Love has been the cause of about a twelfth part of the cases, being a much larger proportion than in France. "It is long," says Esquirol, "since love has ceased to break hearts and turn heads in France." Of the various forms of insanity Monomania has been by far the most frequent. Eight hundred and forty-three where of that description. The cures at Aversa have been three-tenths of the males affected, five-seventeenths of the females. This proportion is not so favourable as in the chief asylum of France and England. At the Salpêtrière and Bicêtre the cures amount to two-fifths of the whole. The greatest number of cures were effected at Aversa, as in France, during the months of September, October, November, and April. The Relapses have been 92, and were most frequent among the male patients. The latter fact accords with Esquirol's own experience; but in Paris the relapses are not so frequent. The mortality has been very high at Aversa,—being no less than a full fourth of the whole. At Paris it is only a thirteenth. The greatest proportion of deaths has been in the months of November, December, and January. The causes of death have been chiefly exanthematic fevers, dry gangrene, rabies (?), very rarely palsy, which is the cause of one half of the deaths in Paris. In 1816 many of the patients were carried off by typhus,—a new proof of the incorrectness of the old idea, that insane people can resist exposure to the causes which produce ordinary disorders in the sane.—Ibid.

Poisoning by Arsenic and Laudanum.—Mr. Scott, of Newington Causeway, has stated a case in the last Number of the Medical and Physical Journal, the object of which will be apparent in the sequel.

A young woman, aged 16 years, swallowed, by her own account, "fifteen penny-worth of laudanum and half a tea-cupful of arsenic," of which
she died in six hours. Mr. Scott did not arrive till near the fatal period, and found her writhing under great torture. She had vomited severely for two hours; and dark offensive motions had been frequently discharged from the bowels. Mr. S. proceeded to work the stomach pump, and two quarts of warm water were twice thrown in and withdrawn by means of that instrument. Very little indeed of the arsenic was dislodged, and as the patient was now in articulo mortis, the process was discontinued. In ten minutes more she expired. The stomach, on being opened, was found to contain about 20 ounces of fluid, which had been injected by the pump. On removing this fluid, the surface of the organ presented a universal vermilion blush, with brownish red patches scattered here and there, chiefly in the pyloric portion. These patches were somewhat pulpy—loose in texture—gelatinous in appearance—and more glossy than the surrounding parts—in fine, "they were portions of the mucous membrane in a state of disorganization," and might be easily detached by pinching with the finger and thumb, leaving the muscular coat denuded. "Near the extremity of the stomach, lay two masses of powdered arsenic, enveloped in a sort of red-dish jelly, which doubtless consisted of the mucous membrane disorganized by the contact of the poison." These were scraped off with a spoon—the quantity might be about half an ounce.

Here Mr. S. properly invites the attention of the profession to the fact that, vomiting, assisted by copious dilution, during two hours, had not detached the arsenical powder from the surface of the stomach; and so entangled was the poison with the softened mucous membrane, that he believes no action of the organ itself could have separated it. The injection of a strong current, by means of the syringe, had even failed to detach the mineral. From this Mr. S. concludes, and we think with justice, that the efficacy of emetics, in dislodging arsenic from the stomach, is confined to a limited time after the poison has been swallowed, though that limit is not yet ascertained, being probably influenced by the quantity swallowed, by the quality and volume of ingesta, and other accidental circumstances. In the absence of all positive information, on this point, Mr. Scott queries, would it not be the safest practice to resort, at once, to the stomach-pump in these cases? Mr. S. here alludes to the superiority of the stomach-pump over any apparatus acting on the principle of the syphon, in consequence of the great propelling power of the former, by which arsenic might be dislodged from localities in the stomach. He might have added, that the activity of the suction power (speaking vulgarly) also gives the pump an advantage over the syphon.—Johnson’s Medico-Chir. Rev.

Poisoning by Belladonna.—Two interesting cases of this accident happened in the practice of Messrs. Adams and Smith, surgeons, of Torres, N. B. of which the following are the particulars. At 5 p. m. on the 5th November, Mr. Smith was summoned to the assistance of two boys, (brothers) one of two, and the other of three years of age, who, in company with a third child, had eaten of the berries of the Atropa Belladonna, about one or two
Quarterly History of

o'clock of the same day. The elder boy went to school, as usual, but when called up to his lesson, he could not speak. He laughed immoderately, and kept grasping at imaginary objects. He was, therefore, sent home; but the laughing continued, and his silence was changed into immoderate and incoherent loquacity, with constant bodily motion. Suspicions of the accident were quickly formed, and Mr. S. was sent for. He found the boy laughing and talking alternately—extremities in violent, and almost constant motion—eyes fixed—pupils dilated and insensible to light. Twenty grains of sulphate of zinc were given at twice, in the course of a few minutes, and the action of vomiting promoted by tickling the fauces with a feather. A great deal of reddish matter, containing pieces of the berries, was thrown up. By this time the younger boy was exhibiting the very same symptoms, and the same medicine was exhibited, but only in half the quantity. He threw off the same materials as the other. Solutions of tartar-emetic were given to both, but with great difficulty, as the jaws were firmly locked. The vomiting was kept up until both the boys had thrown off very much of the reddish stuff. Castor oil was then given to each. Meantime the symptoms of poisoning had increased. The muscular motions were incessant—respiration loud and croupal—faces swollen and red—incoherence the same. Enemata were repeatedly exhibited, to assist the operation of the oil—and some vinegar and water were given in the intervals. 6 o'clock. The elder boy's breathing is loud and stertorous—face turgid and swelled—skin cold—muscular motion less strong—pulse not perceptible in the radials. He was put into a warm bath, and while there, the jugular vein was opened, and five or six ounces of blood abstracted. Considerable relief followed. He was put into a warm blanket. The inordinate muscular movements now came on periodically; and, in the intervals, there was a strong disposition to sleep evinced by both boys; but this was resisted by the attendants, till towards the morning of the 6th, when indulgence was permitted. Strong coffee, and occasionally vinegar and water were given. 9 o'clock in the morning of the 6th. The elder boy has loud croupy cough. The other symptoms are still much the same in both patients. Four grains of calomel were given to each; soon after which the younger boy voided about twenty skins of berries, and in the course of the forenoon, he had several faeculent motions. At 2 p.m. the younger boy was found cold and deadly pale, with scarcely any pulse. He was immediately put into the warm bath, and the chest rubbed with flour of mustard, while assafetida enemata were thrown up. The animal heat gradually returned—the pulse became perceptible. At six o'clock, the same state of collapse returned, and again the same means were employed, in addition to which, warm punch, and chicken-broth were frequently given. When taken from the bath, he was wrapped in warm flannels, and kept by the fire side. At half-past 7, he was much revived, and called for some drink. He is still purged, and the stools are watery. It was not till the third day (7th November) that the boys became sensible to surrounding objects. Previously to this, they were quite blind, and candles held close
to their eyes produced no effect, nor did they seem at all conscious of the light. They evinced much thirst after this, for some time, and had some slight convulsive twitches; but they gradually recovered.

Would the carbonate of ammonia have been more beneficial than the punch, when the alarming symptoms of collapse came on?—Ibid.

On the Treatment of Drowning and other varieties of Asphyxia (Archives Générales de Médecine, Novembre 1826.)—Some experiments and observations of considerable importance have lately been made at Paris on the circumstances which modify the effects of two of the chief remedies for asphyxia,—namely, insufflation of the lungs and galvanism. The author, M. Leroy d’Etiolles, has succeeded in throwing some light on the variable results which have been procured by these modes of treatment by almost every person who has employed them.

With regard to Artificial Respiration, he has found that it requires much more cautious management than is generally believed; for if the air be blown into the lungs with too great force, they become unfit for their function. This he says he has found by repeated experiments on rabbits, dogs, and sheep. The following results were procured with the sheep, an animal whose lungs approach nearer in point of volume to those of man. An incision being made into the windpipe, and a silver tube secured in it by a ligature, a single forcible inspiration was made through the tube with the mouth, and the tube and ligature were immediately withdrawn. In the course of a single minute the animal became agitated and restless, made forcible efforts to inspire and expire, was then seized with convulsions, became motionless and senseless, and the pulse ceased in three or five minutes. If the carotid artery was opened during these symptoms, the arterial blood was observed to become rapidly more and more dark and venous. These phenomena were remarked in four successive experiments. In other three, made with the same animal under the same circumstances, except that the insufflation was performed less rapidly, the breathing was not arrested so suddenly, but became at first embarrassed, and gradually more and more so, till at length death took place in about fifteen minutes from the beginning of the experiment. The symptoms under which these animals died clearly indicated death by asphyxia, and the appearances in the dead body were conformable. The cause of the production of asphyxia under forcible insufflation is not very apparent; at least M. Leroy has not hitherto succeeded in throwing any light upon it. In the second variety of cases, the air-cells of the lungs were probably ruptured, and a communication between them and the cavity of the chest even established through the pleura, for the lungs could not be dilated after death. But in the first variety, in which death took place immediately, the same injury was not produced. The practical conclusion, however, to be drawn from this experiments is manifest and important,—namely, that in performing artificial insufflation, the bellows ought never to be worked forcibly; and we may add another reason for cautious management of them,—that the operator is

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not perhaps always aware how great the force is which he employs in working them. With the bellows a far greater force is easily put forth than can ever be employed with the mouth, which was M. Leroy's instrument. If M. Leroy, however, is correct in considering the forcible expansion of the lungs as the cause of death, in his experiments, the objection which applies to the forcible use of the bellows in the human subject, does not apply so pointedly to forcible insufflation with the mouth; because the operator subjects his own lungs to the same pressure as those of his patient, so that his own lungs will enact in a manner the part of a safety-valve, provided he is not superior in strength of chest to his patient.

The other topic which forms the subject of M. Leroy's remarks is the application of Galvanism to the treatment of asphyxia. It is well known, that, although this remedy has been sometimes found singularly useful, it has very often failed, and not unfrequently it has even appeared to do harm. M. Leroy thinks he has discovered the cause of its failure. When the galvanic current is applied in such a way as to affect the diaphragm, it is almost always applied continuously, in which case the contractions are irregular, and do not constitute a natural inspiration. But if the current is suspended as soon as the muscular contraction begins, then a complete inspiration is produced, and the regularity of the subsequent expiration is not interrupted; on connecting the galvanic circle, a new contraction is produced, which in like manner causes a natural inspiration, if the circle is again interrupted. The plan recommended by M. Leroy, and adopted in his experiments, is to insert a fine acupuncture needle between the 8th and 9th ribs, till it reaches the attachments of the diaphragm, for which purpose a length of a few lines is sufficient,—and then alternately to complete and interrupt the galvanic circle, by touching the needle with one conductor at the proper intervals, while the other is kept permanently in the mouth.—*Edin. Med. and Surg. Journ.*

**Surgery.**

**Employment of Galvanism in the Reduction of Strangulated Hernia and Internal Strangulations.** *(Archives Gen. de Med. Octobre 1826.)* The following curious experiments are well worthy of the attention of surgeons, although the practical application of which they are susceptible has not yet been made. It has been found that when one pole of a small galvanic battery is connected with the mouth, and the other with the anus, the intestines are thrown into increased action, and in a few minutes one or more alvine evacuations are caused. Reasoning apparently from this fact, M. Le Roy d'Etiolles was led to conceive that the topical application of galvanism might be of use for effecting the reduction of strangulated hernia, when other means could not be employed on account of their slow action, or the irritation they produce, or the increase of the fecal matter which they are apt to cause in the strangulated portion by stimulating the superior part of the gut. He accordingly proceeded to try the accuracy
of the idea so far as it could be determined by experiments on animals. He first, however, repeated upon himself the experiment already mentioned with the poles of the battery in the mouth and anus; and he found that, with a trough-battery of twelve pairs of inch-and-half plates, he felt a sense of slight heat at each point of contact, faint flashes of light, movements in the bowels without any general shock, and in a quarter of an hour a sense of weight in the rectum, followed by one or two evacuations. Any considerable augmentation of the number of plates produced so strong a sensation of heat that he could not endure the contact of the wires except for an instant; but after repeated shocks communicated in this way, the bowels were moved in fifteen minutes with nearly the same antecedent phenomena, and without any injury to the health.

He next drew out a loop of intestine from the belly of a rabbit through an incision in the parietes, and repeated the experiment just described with five or six pairs of plates. The portion of intestine, which had been previously immovable, immediately exhibited a brisk undulatory motion, without any general shock or contraction of the muscles of the parietes; and the motion continued some time after the galvanic circle was interrupted. If a ligature was applied round the protruded gut, the movements were less brisk, but still obvious, and they evidently tended to free the gut from the ligature. If the conductor, which in the foregoing experiments had been placed in the mouth, was applied to the protruded gut, the gut immediately contracted at the point of contact; and if both conductors were applied to the protruded gut, the contraction which took place was much greater, and the faeces matter was pushed forcibly towards the superior and inferior parts of the intestines. When this effect was produced on several successive portions of the protruded gut, its contents were gradually discharged upwards and downwards, and its diameter was very much diminished. When the protruded gut, containing faecal matter and gases, was tied with a ligature to imitate strangulated hernia, the foregoing operation soon reduced its diameter to a third or a fifth of what it was originally, so that the gut could be easily pushed through the ligature. When the ligature was applied so as to compress only a half or a third part of the circumference of the gut, the strangulated portion, after the action of galvanism, receded spontaneously. The very same results were procured when the integuments were brought over the protruded gut, and the galvanic fluid was transmitted to it through acupuncture needles. When the gut was tied with a ligature, and then returned into the cavity of the abdomen, the portion operated on was found sensible to galvanism twelve hours afterwards.

The author infers from these experiments, that in volvulus and some other varieties of internal intestinal obstruction, the obstruction may be removed by the brisk peristaltic action which galvanism excites throughout the whole intestines when transmitted from the mouth to the anus; and that in like manner some forms of strangulated hernia; particularly those in
which the reduction is prevented by the accumulation of fecal matter, may
be brought by the application of galvanism through acupuncture needles
into such a state as to admit of easy reduction by the taxis.—Ibid.

Domestic.

A Case of Scirrhus Pancreas.—Dr. J. Augustine Smith has recently
examined a case of the above kind. The patient was an elderly woman
from the country, where she had been treated for a diseased liver. Becoming
worse, she visited New-York, to obtain further medical advice. Here
she was seen by several practitioners, who all considered the symptoms as
extremely obscure. One, indeed, suspected the real nature of the disease;
but in him it was nothing more than a fortunate conjecture. She com-
plained of constant pain, generally in the lateral portions of the umbilical
region, although it occasionally extended upward. She was emaciated, and
took opium to relieve her sufferings, habitually, but not largely. She was
feverish—her appetite was pretty good—she did not complain of indigestion
—retained a considerable portion of her strength, and her bowels were
tolerably regular.

She died after remaining a few weeks in the city, no remedies which
could be devised affording any alleviation of her complaint. Nothing could
be more completely jaundiced than her body was after death. Upon open-
ing it, the liver was found to be hard, somewhat shrunk, and of a bluish ash-
colour. The gall-bladder was enormously enlarged, and resembled a portion
of intestine filled with dark coloured fluid. There was, perhaps, a pint of
yellowish serum in the cavity of the peritoneum, and also some jelly of the
same hue. The pancreas were about an inch and a half thick, and of a
cartilaginous hardness. The intestines, &c. were healthy. Although her
limbs were wasted, internally there was more than the usual quantity of
fat.

A subject, also a female, exhibiting the same post-mortem appearances,
was brought into the College of Physicians and Surgeons during the last
winter. Nothing of the previous history of this person was known. For
cases of this character there is of course no remedy; but they deserve con-
sideration in this respect, that they show why our prescriptions must some-
times fail where the liver is the organ ostensibly affected.

Case of Injury of the Spine. By David Kirby, Student of Medicine,
Lebanon, Penn.—Recoveries from injuries of the spine being extremely
rare, a relation of the following case may not prove unacceptable to the
medical public, inasmuch as it evinces the immense utility of issues in the
treatment of accidents of this kind, occurring to this important part.

John Murphy, a native of Ireland, aged about thirty-five years, in the
summer of 1823 fell from the overshoot of a barn, about three miles from
his place, upon the tongue of a waggon. The violence which had been received, principally upon the back, produced a temporary suspension of his intellectual functions. The ensuing morning Dr. M'Neil, who then resided but a short distance from the place where the accident occurred, was requested to visit him. Upon examination a considerable contusion was observed at the space between the spinous processes of the first and second lumbar vertebrae.

A total paralysis of the inferior extremities immediately followed the accident. There was a suppression of urine, as well as an inability to pass any alvine evacuation by his voluntary efforts. Extensive inflammation from the violence of the injury having been apprehended, general antiphlogistic means were resorted to. His urine was ordered to be drawn off by a catheter, and his bowels to be kept open by enemas. By the energetic employment of bleeding, together with the ordinary measures used to subdue inflammation, the inflammatory symptoms, which had been considerable, were much diminished, but the paralytic state of the inferior extremities continued without any evident amendment.

An issue was now established over the region of the injured part, and frictions with a rubefacient liniment, were instituted upon the thighs and legs. About six months after the occurrence of the accident, a tingling sensation, with occasionally slight spasmodic twitchings, was experienced in the paralysed limbs.

Sensation of these parts, which had been previously to this time entirely absent, began to return in some measure: his bladder had so far recovered its tone, as to have rendered him capable of discharging its contents without the use of the catheter. Injections per anum were no longer necessary. He has now regained the power of motion in his lower extremities, so much as to be enabled to walk with the aid of a staff. His urine is sometimes unusually turbid, and its consistence so thick as to occasion difficulty in passing it, without the use of his favourite beverage, gin.

Case of Delirium Tremens. By Dr. P. Jordan, Lebanon, Penn.—John Kreider, aged thirty years, and residing two miles from this town, on the 3d of May last, received a contused wound on the superior part of the foot, from a piece of hot iron, propelled against it from a blacksmith's anvil, which divided the anterior tibial artery. There was an immediate flow of blood from the wounded vessel, but not so profuse as might be expected, owing, probably, to the contused state of the artery, at the place of division and adjacent parts.

The vessel was secured as soon as possible, by my friend Dr. Gloninger. The ligature employed by him consisted of leather; and was removed by the ulcerative process, on the fourth day.

Kreider is a man much addicted to habits of intemperance, and, we believe, was intoxicated at the time of receiving the injury. Nourishing diet and wine were ordered, but he peremptorily refused to use either for several days; which, together with the constitutional irritation preced-
ing the injury, caused mania atemulentia. Wine, carbonate of ammonia, together with opium and camphor in small doses, and an infusion of humu-
und lupulus, were then prescribed; but as these produced no impression on the disease, and his constitution suffering much from excessive restlessness, during five days, ten grains of opium were given him at once; which proc
ured a sound sleep of twenty-four hours continuance. When he awoke, all marks of mental aberration had vanished; and his mind became per
fectly composed. But during the continuance of his intellectual disturbance the wound assumed a gangrenous appearance and discharged a very un
healthy pus. A poultice of yest was applied to it. Under this treatment it assumed, in a day or two, a very healthy aspect; granulations arose from every part of its surface, and cicatrization went on rapidly. He is now entirely recovered from the injury he sustained, and discharging the usual duties of his calling.

The only important practical precept, in my opinion, deducible from the preceding case, is, the value of large doses of opium, in cases of intellectual derangements from the excessive potation of ardent spirits, and the inutility of a temporising practice in such cases.

Report of Experiments recently performed at the Jefferson Medical Hall, relative to Venous Absorption from the Cavity of the Stomach.—Dr. C. Luzenberg, assistant in the department of Practical Anatomy, had been engaged in performing experiments, at the suggestion of Professor Rhees, for the purpose of determining the influence of the nerves on the function of absorption generally.

For this purpose, both extremities of the stomach were included in liga
tures, together with the nerves which the organ receives from the eighth pair, and from the solar plexus. The prussiate of potash was under these circumstances, abundantly absorbed and detected in various parts of the system.

I then suggested to Dr. L. the following experiments, for the purpose of determining the comparative importance of the veins and the lymphatics, in regard to the function of absorption from the cavity of the stomach.

The animals employed were cats. The abdomen was opened, and the pyloric and cardiac extremeties of the stomach were included in ligatures and divided. The peritoneum was then dissected away from around the coronary artery of the organ, and also from around the principal vein. All the peritoneal attachments were then removed, so that the organ retained no other connexion with the system than through the medium of one artery and one vein. By these the circulation was observed still to be kept up. Such vessels as bled on being divided were secured by ligatures.

The prussiate of potash, in solution, was then, by a tube, carefully con
veyed into the stomach, so as to suffer none to fall into the cavity of the abdomen. The incision was finally closed by sutures, and the animal was suffered to live two and a-half hours. On its being killed at the end of this time, the following interesting phenomena were manifested:
On applying the tincture of the muriate of iron to the blood of the vena portæ, it immediately assumed a strong blue colour. On applying it to slices of the liver, remarkable blue patches were instantly obvious. The same occurred when it was applied to the heart. It was most striking, however, in the interior of the kidneys. When these organs were divided, and their surfaces touched with the tincture, they instantly became intensely blue, as if covered with a thick pigment. When the external surface of the stomach was dashed with the tincture, it exhibited very little of the blue tint, a decided proof that the solution of the prussiate had not transuded through the stomach.

The above experiment was four times repeated. Three times it was done by Dr. Luzenburg, and once by Mr. Mailliard, and always with the same remarkable results.

With a view to determine the comparative activity of the lymphatic absorbents, I then requested the above gentlemen to perform the following:

The principal arteries first, and then the principal veins going to the stomach, were secured by ligatures, so that the sanguineous circulation was feebly carried on by the small vessels remaining. The prussiate was then introduced as before, and the animal having been suffered to live the same length of time, was killed. The most careful application of the test, however, could no where detect the prussiate, except in the strangulated veins of the stomach, where it was found in obvious quantity, they being much distended with blood. This experiment was repeated by both Dr. Luzenburg, and Mr. Mailliard, and with results perfectly uniform.

It might be objected to the last experiment, that the tying of all the principal blood-vessels of an organ should so impair its organic functions that no absorption could be expected to take place; but this objection is at once obviated by the fact, that the substance had entered the veins and passed as far as the ligatures; certainly, then, this function should not have been interrupted in the lymphatics, had it existed in them before the experiment.

The first series of experiments is similar to those performed by Majendie, Gmelin, and Tiedemann, and analogous to some performed in this city by Messrs. Lawrence and Coates. They are interesting, however, as confirming, in the most satisfactory manner, their results, which by some are still doubted as being conclusive. The second is, I believe, unique, and in my mind, renders it quite certain that, whatever may be the office of the lymphatics in the textures of the organ, absorption from the cavity of the stomach is exclusively effected by the veins, and that it is very copiously effected by them. Probably the same is true with regard to the intestinal canal.

The experiments were witnessed by several of my pupils, and will, I am confident, be amply confirmed by all who are disposed to repeat them.

The inferences which are to be drawn from these facts are certainly not a little interesting, in relation to the function of digestion. If substances foreign to the animal tissues, and which cannot be assimilated, are thus
abundantly taken up and conveyed into the circulation, is it not absolutely certain that all soluble or fluid alimentary substances are absorbed with even greater avidity? A very large proportion of our aliment, perhaps a moiety, is either fluid or soluble in water, and when taken into the stomach, needs not to be acted upon by the gastric juice, or any other agent, to qualify it for venous absorption.

We very well know that the fluid parts of meat are highly charged with sapid and nutrient principles. These are expressed by mastication in great quantity; and if the prussiate of potash be absorbed by the veins of the stomach, certainly we may be assured that they are drunk up by the same organs. This is the more credible, when we recollect that the sensation of renewed vigour and strength is felt almost immediately after taking food.—Sugar is another substance highly nutrient, and completely soluble in water. It is capable of sustaining life for a very considerable time, uncombined with any other article. The fattening of the southern negroes on the saccharine juices of the cane stalks is well known. I think it must be admitted that at least a very considerable portion of this substance is absorbed by the veins of the stomach.

The same may be said of mucilages, extractive matters, and perhaps oils. It will be recollected that Haller detected the latter in the blood of the vena portae.

The aliment of some herbivorous animals consists entirely of extractive and mucilaginous matters, obtained by maceration from the vegetable substances on which they feed. Hay, upon which horses and kine will even fatten, very readily yields all its sapid and nutrient parts to water. Farmers very well know that if their hay be drenched by repeated showers, after it is cut, it is scarcely worth the making. When hay has been very scarce I have been informed that, for the sake of economy, hay tea is sometimes prepared for cattle, in which is dissolved every thing nutrient which the plants contain, and of course there is no waste. On this cattle will fatten, if they are furnished with cut straw for producing the usual distension of the stomach, and which yields no nutriment.

Now, is it to be supposed that this decoction of hay is acted upon by a gastric juice, converted into chyle, and then absorbed by the lacteals? Indeed we are assured by direct experiment that these substances are taken up in great quantity by the intestinal veins of these animals. M. Flandrin ascertained that, in the horse, the venous blood of the small intestines possesses a strong herbaceous taste, if obtained from the animal soon after it has taken food.

How such fluids, absorbed by the veins of the stomach, may become assimilated it is easy to conceive. Not a particle of blood from the stomach nor the intestines enters the general circulation till it has permeated the liver, the most important gland in the animal economy. Here not only are the nutrient matters assimilated, but the crude and saline substances which reach the gland from the stomach in the first stage of digestion, probably furnish the materials of the bile, which fluid being then abundantly
secreted, is conveyed to the duodenum, there to meet the residue of digestion, and to exert an important influence in the preparation of the solid aliments, as well as in stimulating the intestinal canal.

We may infer, from the above, that some of the constituent principles of the bile are furnished by fluids which have never entered the general circulation, but are the feculent parts of such substances as are absorbed by the veins. We have thus another reason, also, why bile is more copiously elaborated, from the time that digestion commences. It also enables us to explain the variable nature of that fluid, and also the fact, that its constituents cannot all be detected in the circulating blood. Thus, too, we confer upon the liver an office so long denied to it, corresponding to its magnitude, complexity of structure, and pathological importance; for, if our inferences are correct, it is one of the most important of the assimilating organs, since the elaboration of bile, from the fluids absorbed, is especially subservient to their animalization.

It will be recollected by those into whose hands an Essay on Digestion, published by me a short time since, may have fallen, that, in it, and in the supplement which followed it, I advocated the following principles in regard to that function:—

1st. That, of the substances taken into the stomach, some, and especially the fluid aliments, are taken up by the veins and conveyed to the liver, where they are further assimilated previously to being added to the circulating blood.

2d. The solid aliments which remain are slowly macerated and dissolved in the stomach, not by a chemical agency, since the constitution of the secreted fluids of that organ does not warrant the supposition, and because, also, the solution is not effected when the nerves of the stomach are divided, nor when these fluids are removed from the stomach. It is accomplished probably by a vital influence, conferred upon its fluids by the nerves of the stomach.

3d. The solid aliments thus rendered semi-fluid on reaching the duodenum, and having been acted upon by the hepatic and pancreatic secretions, are absorbed by the lacteals, not becoming chyle, however, till they have entered these small vessels. Thus, the constituents of the blood, as furnished by digestion, are immediately derived from two sources, a circumstance by no means inconsistent with the compound nature of that fluid.

N. R. S.

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OBITUARY.

Amongst the desolations which time has produced, we have to record the death of the late highly lamented Dr. Samuel Wilson, of Charleston, South Carolina. This event took place on the 15th March of the present year. Dr. Wilson was born in Charleston, January 26, 1763. After acquiring a competent knowledge of classical learning, he began the
study of medicine, under his father, Dr. Robert Wilson, who was for many years an eminent practitioner in that city. In 1784, he visited Europe and studied for two years in Edinburgh, under the distinguished professors of that University; here he became acquainted with some of the most distinguished medical practitioners of the United States, and retained to his last days, a fond recollection, and an interesting correspondence with the companions of his youth.

The whole tenor of Dr. Wilson's life was marked by high and honourable, and virtuous deportment. Skilful as a medical practitioner, he commanded the esteem and confidence of his fellow-citizens to an unlimited degree. Benevolent and humane, conscientious in the discharge of every moral and religious duty, and with a character above reproach, he died, as he had lived, beloved, honoured, and esteemed, by all who knew him.

H.

QUARTERLY BIBLIOGRAPHICAL NOTICES


We shall notice this interesting report hereafter.

2. An Address to the Guardians of the Washington Asylum, and the Members of the Board of Aldermen and Common Council. By a Physician, in reply to an address by Thomas Henderson, M. D. Professor of the Practice of Medicine in Washington.


These Numbers continue to sustain with increased ability, the character of the first Number, noticed in our last. We recommend this work to our professional brethren as an independent and consistent Journal.

5. The Western Medical and Physical Journal, Original and Eclectic. Nos. 2, 3, 4, 5.


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UNIVERSITY REGISTER.

Under the above head we propose hereafter to publish a regular account of the proceedings of the medical department of the University of our State. In a subsequent number we shall give a sketch of the history and organization of the University.—Ed.

UNIVERSITY OF THE STATE OF NEW-YORK.

COLLEGE OF PHYSICIANS AND SURGEONS OF NEW-YORK.

New-York, August 17th, 1827.

The twenty-first session of the College will commence on the first Monday of November next, after which the several courses of Instruction will be continued by the respective Professors, viz.—

JOHN AUGUSTINE SMITH, M. D., on Anatomy and Physiology.
ALEXANDER H. STEVENS, M. D., on the Principles and Practice of Surgery.
JOSEPH M. SMITH, M. D., on the Theory and Practice of Physic and Clinical Medicine.
EDWARD DELAFIELD, M. D., on Obstetrics and the Diseases of Women and Children.
JOHN B. BECK, M. D., on Materin Medica and Medical Jurisprudence.
JOHN TORREY, M. D., on Chemistry and Botany.

At extra hours, and without additional expense to the Student, Lectures will be delivered on Medical Jurisprudence and Botany, by the Professors of those sciences.

In the various departments of the College every facility is afforded for the acquisition of professional knowledge.

The anatomical Museum, heretofore one of the most extensive in the country, has been recently still farther enlarged by the addition of private collections and the acquisition of new preparations; the specimens of morbid anatomy particularly, are daily increasing. In practical anatomy the opportunities will be commensurate with the utmost wishes of the Student.

In the Obstetrical Department cases will be furnished to such Students as may desire them, to be attended under the direction of the Professor of that branch.
The Trustees cannot omit this opportunity of expressing their obligations to the Regents of the University and to the Legislature, for the care which they have recently manifested for the science of Medicine in general, and for the Medical Institutions of this State in particular. At their last session, the latter body passed, nearly unanimously, the statute which will be found below. It is now published for the information of Medical Students, who will observe, that the "Diplomas" referred to, include those which emanate from Medical Societies, as well as those which are conferred by Medical Colleges.

By order of the Board of Trustees,

John Watts, Jun. M. D., President.
Nicoll H. Dering, M. D., Registrar.

"Be it enacted by the People of the State of New-York, represented, in Senate and Assembly, that all Diplomas granted by authorities out of this State to individuals who have pursued their studies in any Medical School in this State, not recognised by the Laws of this State, shall be void and of no effect, as it regards authorizing the said individuals to practise Physic and Surgery in this State."

COLLEGE OF PHYSICIANS AND SURGEONS OF THE WESTERN DISTRICT.

The lectures of this Institution will commence on the first Tuesday in October next, and will be delivered as formerly, in the following order:

On Midwifery, by W. Willoughby, M.D.
On Chemistry and Materia Medica, J. Hadley, M.D.
On Anatomy and Physiology, J. M'Naughton, M.D.
On Practice of Physic and Medical Jurisprudence, T. Romeyn Beck, M.D.
On Surgery, J. Delamatter, M.D.

Professor Delamatter was formerly attached to the medical institution in Berkshire, (Mass.) He is now a resident professor at Fairfield.

The buildings of the institution have been enlarged since the last session. A new stone building of 3 stories high, and containing 36 apartments, has been erected for the purpose of accommodating the students with lodging rooms. The lecture rooms, laboratory, library, and museum, in the college, have also been enlarged and improved.

JAMES HADLEY, Registrar.

* From the foregoing law, together with the following extract from a circular recently published, it appears that the question in relation to medical licenses in this State, is finally settled.

"Rutgers' Medical College.

"The faculty having recently obtained the opinion of counsel, relative to the exact nature of the restriction imposed by the law passed against
INTELLIGENCE.

A new Dispensary has recently been established in the northern part of our city, in which the following officers have been elected.

William Torrey, President.
William M. Johnson, First Vice President.
Thomas Stokes, Second Vice President.
John Rogers, Third Vice President.
Levi Kidder, Secretary.
James N. Wells, Treasurer.

Attending Physicians—James Stewart, M.D. John L. Suckley, M.D. J. Brinkerhoff, M.D. Chas. A. Lee, M.D.
Consulting Physicians—Thomas Boyd, M.D. Charles Drake, M.D.
Consulting Surgeons—Valentine Mott, M.D. Steph. C. Roe, M.D.
Samuel L. Griswold, Apothecary.

Read's Apparatus.—We are happy at having it in our power to inform the profession, that Mr. Richard Wood, of this city, the American publisher of Johnson's Review, has received for sale from the maker in London, a number of these instruments, adapted to the various uses noted in Dr. Moore's communication on the subject, in this Number of our Journal.

Dentistry.—Mr. Charles Newton, a skilful and ingenious dentist of this city, has invented an instrument, for which he has taken out a patent, intended for facilitating the operation of plugging decaying teeth, by preventing the saliva from flowing over the tooth during the operation. It is very neat, and easy of application, and appears to be well adapted to the purpose for which it is intended.

In compliance with the request of Dr. Zollickoffer, we are happy to give insertion to the following account of the proceedings of a distinguished and useful foreign association.—Ed.

this institution, at the last session of the Legislature, find that they will not be able, under their present arrangement, as they believed and announced in their circular, to confer, along with their diploma, the privilege of practising medicine in the State of New-York."

"By order;"
"VALENTINE MOTT, M. D."

In addition to the foregoing it may be proper to state, for the information of students, that the only valid licenses to practise physic in this State, are those which emanate either from the University or from the State or County Societies. Any degrees, therefore, which may be conferred upon students of this state by literary Colleges, either in or out of the State, are only honorary in their character, and cannot give the holder any legal right as a practitioner.—Ed.
MEDICO-BOTANICAL SOCIETY OF LONDON.

The anniversary meeting of this Society was holden on Tuesday, the 16th day of January, 1827. Sir James M'Grigor, M.D., F.R.S., K.T.S. President, in the chair.

The various reports of the Treasurer, Secretary, Librarian and Conservator were laid before the meeting, and thanks were ordered to those officers for their exertions during the past year.

The President addressed the Society at considerable length, and began by advertsing to the great loss the institution had undergone in the death of His late Royal Highness the Duke of York, who had been pleased to extend his patronage to it, from a conviction of its utility to the Medical officers of the army. He alluded to the numerous and valuable accessions the society had made during the past year, and to the honourable mention made of the Society by several foreign journals of eminence and science. He observed that the annual custom of distributing a gold and silver medal to the authors of the most valuable communications on the subjects of its inquiry, at the same time that it rewarded the successful, awakened in others a similar desire of distinguishing themselves. He informed the meeting that their council had awarded, in which he had no doubt they would concur, the Society's gold medal to their worthy director John Frost, Esq. F.S.A. F.L.S. for his communication on the Ipecacuanha; and the silver medal to John Peter Yosy, Esq, for his paper on the Menyanthes Trifoliata.*

The President having respectively invested these gentlemen with the same, they severally returned their thanks to the Society for the honour that had been done them, in thus singling them out as marks of their favour; and to the President for the handsome manner in which he had conveyed the sense of the Society on the subject.

The ballot for the officers and council having closed, and the lists examined, the following gentlemen were by the Scrutators declared unanimously elected.

* The Menyanthes Trifoliata, or Buckbean, is indigenous to the United States, as well as Europe. The plant as well as the root of this production is intensely bitter. Professor Bigelow says, "we may regard it as one of the numerous vegetable bitters abounding in our country, which are equal in strength to imported articles of this class, and which may hereafter lessen our dependence on foreign drugs." I hope the American medical public will ere long be placed in the possession of the remarks of the distinguished J. P. Yosy, Esq. upon this subject, which are no doubt of a nature truly interesting; as also the communication of the learned and indefatigable John Frost, Esq. F.S.A. F.L.S. Zollick.
President—Sir James M'Grigor, M.D. F.R.S.
Treasurer—Hy. Drummond, Esq. F.S.A.
Director—John Frost, Esq. F.S.A. F.L.S.
Auditor—William Newman, Esq.
Secretary—Richard Morris, Esq. F.L.S.
Professor of Botany and Materia Medica—John Frost, Esq. Director.
Hon. Librarian—Doctor Munro, V.P.
Professor of Toxicology—G. G. Sigmond, M.D. F.L.S.
Counsel of the College and Secretary for Foreign Correspondence—John Peter Yosy, Esq.
The thanks of the meeting having been voted to the Vice-Presidents, Director, Auditor, and Council for the past year, it was moved by Hy. Brandwith, Esq. and seconded by William Newman, Esq. and resolved unanimously, that the cordial and grateful thanks of the Society be given to Sir James M'Grigor, President, for the great interest he had displayed in furthering the objects of the Society, and for the dignified and impartial manner in which he had filled the chair at this anniversary meeting, and also, that a copy of this resolution be presented to him.
On the 9th of February, the Professor of Toxicology delivered an introductory lecture on that subject, and the Professor of Botany offered some remarks on a new partly essential oil, termed Jausa oil, lately arrived from the East Indies.

TO READERS AND CORRESPONDENTS.

1. Our next will contain communications from Professor Torrey, Drs. Ludlow, Saynish, S. W. Moore, Lee, &c. &c.
No. XXIV. will be published on the 31st of December.

ERRATA.

Vol. VI. No. 2, p. 188, line 11, for aponeurosis read aponeuroses.
Page 188 line 21, for these too read these two.

— 192 last line of note, for the or tubercle spine read the spine or tubercle.
— 201 line 12, for double femoral hernia read double femoral hernia.
— 203 line 1, for similar direction read semilunar direction.
— 209 line 14, for anteriorly read anteriorly.
— 212 line 9th from the bottom, for right external iliac read right iliac.
— 212 line 24th from the top, after the word pelvis insert minor, thus pelvis (minor.)

Vol. VI. No. 3, page 262, 6th line from the bottom, for his contemporary read who shortly succeeded him.

Page 408, 20th line from top, for strange read strong.
ART. I. *On the Pectic Acid of Braconnot, and its identity with Sclerotin, a peculiar principle existing in the Tuckahoe, or Indian Bread.* By John Torrey, M.D. Professor of Chemistry and Botany in the University of New-York.

The vegetable principle, called by Braconnot, Pectic Acid,* which is ascertained to form a constituent of many esculent and herbaceous plants, appears to be identical with a substance which I discovered some years since, in analyzing the Tuckahoe; a subterraneous fungus of the southern States.

In November 1819, I communicated to the Lyceum of Natural History, an account of this vegetable production, which was published in the New-York Medical Repository for December 1820. I will first repeat the principal part of this Memoir, and then compare the properties of Pectic Acid and Sclerotin.

The Tuckahoe was first described by Clayton, in the Flora Virginia of Gronovius.† In the second edition of that work (p. 176) it is called Lycoperdon solidum. From the time of Clayton, this vegetable does not appear to have been noticed

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† Tubera terrae maxima, externe pulla et scabra, intus candida. Ad panem consiciendum Iudi utuntur, vulgar Tuckahoo.
Torrey on Pectic Acid.

by any writer, * until Dr. Mitchell gave a short account of it in the Medical Repository. †

Barton, in his Collections, ‡ mentions that the roots of the Smilax China [Pseudo-China] are used as food by the Southern Indians; but these could scarcely be confounded with the fungus in question.

In May, 1817, the late Dr. Macbride, of Charleston, S. C. communicated a memoir on this substance to the New-York Philosophical Society. This paper was never published, but an abstract of it is inserted in the first volume of the American Monthly Magazine.§

Though the Tuckahoe is quite common in the southern States, its natural history has been much neglected. Its name in the Indian language is said to designate bread, though it is applied to other edible roots. It is met with under ground, from two to three feet beneath the surface. Its form, for the most part, is globular, and its size varies from that of an acorn, to the bigness of a man's head. Sometimes it is found emerging from the ground, and exposing a small part of its surface. When first dug up, it is said to be soft enough to be easily cut with a knife, and of an acrid taste. Its colour internally is white, and its texture compact and homogeneous. It is covered with a tough external substance, strongly adhering to the parenchyma, of a dark brown colour, and much corrugated. When dried, it becomes hard and loses its acridity, but most of its other characters are retained. In this dried state, it has very little taste or smell, and may, without much difficulty, be reduced to powder.

When the Tuckahoe is examined by the microscope, it exhibits no traces of organization. No fibres or pores can be detected in it. It breaks as freely in one direction as another. These characters, with the peculiar nature of its bark, induce me to consider it as a cryptogamous plant of the fungus tribe.

* Unless it be the Lycoperdon cervinum of Walt. fl. Carolin. p. 262.
† Vol. XV. p. 335.
§ Page 194. The paper was afterwards sent to the Linnæan Society of London, and printed in the 12th vol. of their Transactions, (pp. 388-391.)
In those parts of our country where the Tuckahoe abounds, it is generally supposed to be the root of the Convolvulus panduratus, called in this neighbourhood, *Man of the earth*; but Capt. Le Conte and Dr. Macbride, who have both examined the substance in its natural situation, observed nothing to favour such an opinion. Roots of the Convolvulus which I have examined, were altogether different from Tuckahoe. Capt. Le Conte informs me, that in some places at the south, it is believed to be the roots of the Dioscorea villosa; an opinion not more probable than the other.

Dr. Macbride, in the memoir alluded to, endeavoured to prove what Clayton first thought this substance to be—that it is a proper fungus, and not the root of any vegetable; and most of the botanists of the south are of the same opinion.

According to Mr. Rafinesque, this fungus belongs to an entirely new genus; and he thinks, that he has discovered its organs of reproduction, imbedded in the bark, in the form of buds. These, however, I have not been able to find.

Dr. Macbride has not given his opinion respecting the proper genus or species of this fungus; the principal object of his inquiries having been, to ascertain whether, as had been questioned, the substance was parasitic on the roots of plants, or whether it had an independent existence. He was inclined to adopt the former opinion, in which he is supported by the observations of Capt. Le Conte. The fine specimens presented by Dr. Macbride to the New-York Philosophical Society, and now preserved in the Cabinet of the Lyceum of Natural History, seem to confirm this opinion, as some of them have the roots of plants running through, or adhering to them.

It would be difficult to assign a place among the Linnaean genera of fungi, for the species in question. It has been referred to Lycoperdon, and also to Tuber. To the former it bears no resemblance, and from the latter it differs in being destitute of seminiferous veins internally.

According to the system of Persoon, as contained in his Synopsis Fungorum, published in 1801, the Tuckahoe must be considered as a Sclerotium—a genus which is placed
among the Angiocarpi, or those fungi which bear seed internally. De Candolle, however, in a monograph of the genus which he published in the Mémoires du Museum d'histoire Naturelle of Paris, for 1816, has proved that the Sclerotium belongs to the Gymnocarpi, or those fungi which are furnished with external organs (spori) of reproduction. He places it among Elvella and Clavaria, though it is much more nearly allied to the latter.

Sixteen species of the genus are described in Persoon's Synopsis, and thirty in the Monograph of De Candolle, from all of which the Tuckahoe is perfectly distinct. I therefore propose it as a new species, under the name of S. giganteum, with the following diagnosis:—S. subterraneum, solitarium, subglobosum, intus album; externe cortice corrugato suberoso nigrescente-spadiceo tectum.* It inhabits from Virginia to Florida, under ground.

Having determined the botanical characters of the Tuckahoe, I submitted some of the fungus to chemical analysis. I was particularly desirous of ascertaining, whether the opinion of Dr. Macbride, that it consisted chiefly of a modification of gluten, was well founded.

I. The first experiment which I made on the substance was to try the effect of boiling water upon it in mass. Pieces of

* I was not aware, until several years after my paper on the Tuckahoe was published, that my excellent friend, the Reverend Mr. Schweinitz had also described this vegetable, and had, likewise, referred it to the genus Sclerotium. This distinguished mycologist has noticed it under the name of S. Cocos, in a descriptive catalogue of the fungi of North Carolina, which was published in the Comm. Soc. Nat. Curios. Lips. 1820.

In the recent elaborate Systema Mycologicum of Fries, the S. Cocos and two kindred species are constituted into a distinct genus, under the name of Pachyma. These fungi were separated from the other Sclerotii, chiefly on account of their habitus, for Fries acknowledges that the fructification is unknown. This learned botanist has, however, fallen into a mistake respecting the prominent character of his new genus. The name Pachyma, alludes to the supposed thick skin of S. Cocos, which is the type of the genus, and by a typographical error in Mr. Schweinitz's catalogue (p. 31) is described as being "unciam crassus" instead of lineam. Vid. Fries' Syst. Mycolog. ii. p. 242.
the size of a walnut swelled a little, but did not soften much in three hours boiling. They were then shaved very fine, and boiled again for seven hours. The fungus swelled more, and became translucent, but it did not break down into a pulp, nor did the shavings adhere together. The same was set aside, covered with water, and kept at a temperature varying from 45° to 70°. In a week it became covered with mouldiness, but at the end of seven weeks, no fermentation had taken place, nor had the mass become sour.

II. Some of the substance was reduced to a fine flour, and kneaded with leaven. The mass had not the least ductility, and though kept near a stove six weeks, showed no signs of fermentation.

These experiments are sufficient to prove that it cannot be gluten, for that substance, besides its other remarkable properties, putrefies very soon, when kept moist.

III. A portion of powdered Sclerotium was triturated in a mortar with cold water. The powder did not adhere, but it swelled a little. When the liquor was filtered off, it had a slight opaline appearance. It was then reduced to a small quantity by evaporation, and applied to slips of paper like paste, but without making them adhere.

IV. Some of the powder (120 grains) with a sufficient quantity of water, was introduced into a retort, and a receiver attached. When half the quantity of water was distilled over, it was removed for examination. It was colourless and nearly transparent, and had a peculiar, but not strong smell, a little resembling mushrooms. Various re-agents applied to it detected no foreign substance; therefore little of consequence came over in distillation.

V. The liquor remaining in the retort was filtered while yet hot, that any gluten or starch it contained might not be deposited; as these substances are insoluble in cold water: but the fluid, when cold, let fall very little sediment.

a. Alcohol poured into it did not affect its transparency, except when much concentrated; it then threw down a small quantity of a tough substance.

b. Acids produced no effect.
c. Vegetable blues were not altered.

d. Solution of alum, or nitrate of silver, produced no effect.

f. Neither did the acetate of lead.

h. It could not be used as paste.

When evaporated to dryness, it left (2 grains) of a sweet brownish substance, which refused to crystallize, and burned with the calomel smell.

VI. The next menstruum used, was alcohol. It was digested a few hours on the Sclerotium, and strained while hot, through blotting paper: what passed through was colourless and transparent. When much concentrated by evaporation, it assumed the appearance of a jelly: this, when entirely dried, was of a horn-like texture, though brittle; and it was soluble in alcohol, but not in water. It weighed 1¼ grain.

VII. Ether was digested on some of the powder a considerable time, but it produced little effect.

Finding that neither hot nor cold water, alcohol, nor ether, exerted much action on the Sclerotium, I tried the effect of alkalies.

VIII. A weak solution of potassa softened the powder, and when heated, effected a complete solution, of a brown colour, and the consistence of syrup. To this solution the following re-agents were applied:

a. Muriatic acid instantly converted it into a colourless jelly, even when diluted with six times its weight of water.

b. All the mineral and vegetable acids produced a similar effect.

c. Likewise a solution of alum.

d. Infusion of gallnuts produced a thick brown jelly.

e. Muriate, oxalate, and nitrate of ammonia being added to the alkaline solution, formed the jelly, but they were decomposed. The liberated ammonia was manifested by the smell and by the cloud which formed when muriatic acid was brought near it.

f. Nitrate of silver, the acetates of zinc and lead, neutral carb. potassa, sulphate of potassa, and several other salts, gelatinized it.
g. Muriate of soda did not produce the effect till the following day.

h. Alcohol instantly separated an elastic fibrous substance, which collected on the spatula, and much resembled the fibrin of blood. It became semitransparent and brittle on drying, and then was re-soluble in alkali.

i. Carbonic acid gas, passed through it, produced a jelly.

k. Also a current of chlorine.

IX. Caustic soda dissolved Sclerotium, and the solution was affected by tests, much like that of potassa.

X. Ammonia dissolves Sclerotium, but not so readily as the fixed alkalies, and the solution is colourless. When heated, the ammonia is disengaged, and the substance is left behind, unaltered in its chemical properties. In this way it may be spread over any surface by means of a brush. It will cause papers to adhere when applied as paste.

XI. The effects of acids on the substance of the Sclerotium were not less remarkable than those of alkalies.

When some of it in powder is thrown into warm nitric acid, a violent action soon takes place; much nitrous gas is liberated, and the powder is entirely dissolved. When the whole is boiled for some hours,—the acid being supplied as fast as it evaporates, crystals form in the solution when it is set at rest. These are crystals of oxalic acid, as is proved by the abundant and instantaneous precipitate which falls when calcareous salts are added. A portion of the artificial bitter principle is also formed.

XII. The sulphuric acid when concentrated, decomposes the Sclerotium, and some of the artificial tannin of Hatchett is formed.

XIII. The same acid, when diluted, dissolves it by the application of heat, without decomposition, and the solution is of a yellow colour. When this acid solution was saturated with an alkali, the substance of the Sclerotium fell down, but considerably altered in many of its properties. Red sulphate of iron did not discolour it, showing that no tannin was formed.
XIV. The muriatic acid dissolved but a small quantity of Sclerotium.

XV. Some of the substance in fine powder was kept suspended in water by agitation, while a current of chlorine gas was passed through it; but this agent had little more effect than making it very white.

XVI. It now remained to examine the substance by destructive distillation. A quantity of it in large fragments was introduced into a green glass retort, previously coated with clay. The vessel was exposed to a naked fire, which was gradually increased. A quantity of pure water first came over, then a thick yellowish smoke, which gradually condensed into an amber-coloured liquid. Much gas was also evolved, which was collected by the pneumatic apparatus. When examined, it was found to be carbonic acid, carbonic oxide, and carburetted hydrogen. The liquid in the receiver had a penetrating empyreumatic odour, a disagreeable acid taste, and it effervesced with alkaline carbonates. Some of it, saturated with potassa, did not give out any smell of ammonia, and when treated with sulphuric acid, evolved vapours of acetic acid. It appears, therefore, that the distilled liquor is vinegar, combined with empyreumatic oil, or what was formerly called pyroligneous acid.

The charcoal in the retort was small in quantity, and appeared as if it had undergone fusion, the fragments having all united into one mass. This charcoal incinerated in a platina crucible, yielded ashes which contained no alkali, but effervesced with acids, and appeared to consist in great part of carbonate of lime.

From the foregoing experiments it will be seen, that the Tuckahoe or Sclerotium is a remarkable substance, and very different from what it has heretofore been considered. It is abundantly proved not to be gluten, a modification of which substance Dr. Macbride supposed was its principal ingredient; others believed it to contain a large quantity of starch—but my experiments detected none. It certainly consists almost entirely of one substance, or that which is left when alcohol and water have taken up all they are capable of dissolving.
In comparing its characters with those of the numerous secondary principles of vegetables, described in the latest chemical works, it will be found to differ from them all. It evidently belongs to the same class with fungin, medullin, lignin, and other inert ingredients of plants. It is, however, somewhat allied to fungin, though quite a distinct principle. As it differs from every other hitherto described, it must be considered as a new species, and may be called Sclerotin. Its properties have been sufficiently detailed in the course of the experiments.

Since I read the Memoir of Braconnot, I have repeated my experiments on the Sclerotin and have no doubt of its identity with pectic acid. I cannot, however, distinguish in it any acid properties when it is perfectly pure. It appears to me, that the property of reddening vegetable blues, observed in it by Braconnot, was owing to a portion of the acid which he employed for its coagulation being entangled in the jelly. When muriatic acid was added to the solution of Sclerotin, I found it impossible to remove the excess of this substance by the most copious washing, even with potassa; so completely was it enveloped in the gelatinous mass. The alkali, also, used to dissolve the Tuckahoe, cannot be washed from the jelly. What are described as salts of pectic acid by Braconnot, I suspect are only mixtures of the Sclerotin with the alkali employed to dissolve it, and which was entangled in the substance when the jelly was formed.

The pectic acid, in every essential character, resembles the principle which I found in the Tuckahoe.

Like the Sclerotin, it is insoluble in cold water; but it is taken up in small quantities by hot water. Both principles are dissolved in large quantities by alkalies, and their solutions are gelatinized, even when very dilute, by alcohol, acids, neutral salts, and both, by the action of nitric acid, yield crystals of oxalic acid.

Braconnot proposed to make a useful application of the pectic acid. He ascertained that a small quantity of the
substance, in combination with potassa, would cause a large quantity of sugared water to gelatinize by the addition of an acid. In this way he prepared aromatic jellies, perfectly transparent and colourless, and very agreeable to the taste and sight. Rose-water, coloured with cochineal, and sweetened, forms the basis of an exquisite jelly.

It is a very remarkable circumstance, that an entire vegetable, in a dried state, should consist almost exclusively of one proximate principle. Yet such appears to be the nature of the Tuckahoe, for it can lose nothing of consequence but water, during the process of exsiccation.

As this production is abundant in some part of our country, it is probable that hereafter it will be much employed in confectionary.

Art. II A Case of Hydrocephalus Internus, with Remarks on the Operation of Paracentesis Cerebri. By Charles Alfred Lee, M.D. one of the Physicians to the Northern Dispensary of New-York.

Hydrocephalus internus is generally and justly ranked among the opprobria medicorum, and from Hippocrates, who scarcely left a remedy untried, to our own day when nothing is done, it has appealed in vain to the skill of the physician and the resources of our art. The idea that it is incurable seems widely prevalent, and it is to be feared prevents many from resorting to such means as would promise success, or at least mitigate the sufferings and prolong the life of the patient. That an effusion of fluid, within the cranium is a more serious evil, and of a more dangerous character, than such accumulations in any other part of the system, is obvious and self-evident, from the very structure and function of the part affected; but that it should necessarily and uniformly prove fatal, we are not so ready to grant. Indeed, we conceive that practitioner to be highly culpable, who, when called to cases of this nature, either leaves his patient to die, or administers some inert placebo to allay the fears, or gratify the wishes of the friends, without resorting to those prompt
and decisive measures which the nature of the disease and the urgency of the case demand.

The above remarks have been suggested by witnessing the fatality of this disease, and by one case in particular, which fell under my care during the past summer; a history of which is here given with the hope that it will not prove altogether uninteresting.

A. B. born of healthy parents, soon after birth showed symptoms of hydrocephalus. The head was rather hotter than natural, and the pulsation of the carotids showed a preternatural determination of blood to the brain. Still the child nursed well, had natural evacuations from the bowels, and, except for the rapid growth of the head and watchfulness at night, would have been pronounced healthy. The gradual widening, however, of the sutures, the fluctuation within, the obliquity of the sight, and an aversion to light, soon showed, too plainly to be mistaken, the nature of the disease. At the age of two months, the head had so much increased in size, that tapping was proposed to evacuate the water, but consent could not be obtained. Nothing was done by way of general treatment, except an attention to the state of the bowels, which were regulated by small doses of castor oil and calc. magnesia. At the age of three months, the head became so unwieldy by its size, and no chance of recovery remaining, except by evacuating the water, however small that might appear, consent was finally granted. The dimensions of the head, as taken at this time, were the following:

Fronti-occipital circumference, 27 inches; lateral circumference, 26 inches; from ear to ear, over the vertex, 15 inches; from the chin to the vertex, 11 inches, while from the same to the inner canthus of the eyes measured but 2½ inches. The sutures, of course, were all widely separated, and the posterior part of the sagittal was more than six inches in width. The bones were all loose and detached; the frontal bone, in particular, was separated from the nasal and malar, and divided into two equal portions. The water thus having a free passage to the inner angle of the eyes, through the fronti-nasal
suture, turned the eyes out, so that the two axes of vision formed an angle of near ninety degrees.

I performed the operation with a common scalpel and grooved director, making the puncture at the superior anterior corner of the right parietal bone. About eight ounces of water were drawn off, coloured somewhat with blood from the incision; the collapse of the integuments being so great, it was not considered expedient to take away more at once. The puncture was secured as well as possible, by compress and adhesive straps, but these were retained with difficulty, from the pressure occasioned by the crying of the child. The next morning I was sent for in haste, and found that the water had been dribbling away during the night, so that the pillow and clothes in the cradle were thoroughly wet, in consequence of which the child was nearly exhausted.

A suture was now taken, and other straps of adhesive plaster applied; and though, as near as I could calculate, more than a quart of water had been discharged during the night, the oozing still continued. Some wine and nourishment were directed, with an anodyne to procure rest, and light and noise excluded as much as possible. The operation was performed on the 5th of September. On the 7th the wound united, and the bandage was tightened. It was my design to repeat the operation every few days, taking away a small quantity at a time, until the whole should be evacuated; but the accidental loss of so much fluid at once, defeated the plan, by reducing the patient to a dangerous degree of debility. The principal and indeed only indication now seemed to be, to support life and strengthen the vital actions, until the child should be so far restored as to be able to sustain a repetition of the operation.

Sept. 8th. Found my patient labouring under re-action—hot, restless, with dry skin, tongue furred, with a small, weak pulse, and upwards of 200 in a minute. Within the preceding twenty-four hours much larger quantities of urine than natural had been passed, and the head diminished in size so rapidly as to require the bandage to be tightened twice during the day. This continued for several successive days, during
which the bowels were kept open by small doses of ol. ric. and other mild laxatives.

Sept. 17th—twelve days after the operation. Child nurses tolerably well, and seems pretty free from pain—sleeps better in the day-time than at night—fever slight—countenance brighter—less strabismus—tongue clean—head much smaller—urine continues to flow largely. On the day following, for the first time since coming under my care, the child was able to turn its head slightly upon the shoulders. From the 17th to the 25th of September, nothing occurred worthy of particular notice—the urine was diminished to nearly the usual quantity, and the size of the head appeared stationary. The head had thus far been daily growing smaller, and the hope was entertained that the water might eventually all be discharged, without resorting to a second operation; but on visiting my patient on the 26th, I found the bandage evidently tightened, and every sign of a re-accumulation of the fluid. From this time until the 8th of the following month, the head gradually increased in size—body emaciated—pupils of the eyes dilated—child refused the breast, and seemed to suffer much pain. The dimensions of the head were as follows:

- Lateral circumference, 7 inches.
- Fronti-occipital circumference, 22 inches.

From the tight bandaging, the longitudinal diameter of the head (if I may so call it) was much lengthened, while the lateral was nearly natural.

On the 8th October, I made a puncture at nearly an equal distance between the parietal and frontal bones, on the right side, and drew off about fourteen ounces of water. The integuments were again firmly supported by a double-headed roller, and as the pressure from within was less, and the opening smaller than in the former operation, there was no dribbling from the wound. From this period until death, which happened on the 28th October, the child grew worse—took but little nourishment—when not screaming, lay comatose, and seemed insensible to light and sound—body gradually emaciated, and every symptom indicated the fatal termination which was to follow.
Dissection.—The vessels of the scalp and pericranium were much enlarged, and on cutting through the dura-mater, on the right side, about half a pint of fluid of a deep yellow colour escaped. The dura-mater adhered firmly to the bones of the cranium, and the water that was discharged was collected between that membrane and the pia-mater. Both these membranes were actually disorganized, and exhibited the strongest marks of inflammation I have ever witnessed. There were large collections of pus and coagulating lymph lodged on the inner side of the temporal, occipital, and parietal bones, as well as at the base of the skull. Shreds of an adventitious fibrinous membrane were also found floating in the water, and adhesions in various places.

The brain was a mere pulpy sac, from half an inch to an inch and a half in thickness, and containing three pints of clear water. No marks of organization were left, and, to use a comparison of Golis, who describes several cases very similar to this, the brain resembled a foot-ball, lined with a membranous sac, constructed of a preternatural membrane and filled with fluid. The whole was of much softer consistence than natural, and of a dead white colour, like the substance of the nerves. In short, the brain was reduced to a homogeneous pulpy mass, with scarcely a trace remaining of the parts usually found in cerebral dissections. The cerebellum remained unaltered, though the dura-mater, which covers it, was lined with effusions of lymph and purulent matter. The spinal marrow also exhibited no morbid appearances.

The thoracic and abdominal viscera were examined, but nothing worth noticing was observed, except, perhaps, a preternatural fulness of the gall bladder.*

Respecting the operation of paracentesis cerebri, there seems to be a difference of opinion among medical men; some be-

* The above were all the appearances worthy of notice, except the remarkable thinness of the bones of the cranium. The texture of the bones was firm, yet as thin and transparent as oiled writing paper. Though dense, they could be cut with difficulty, like thickened and indurated cartilage.
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believing it to afford little or no prospect of relief; while others, as strongly recommend it as being the surest, safest, and speediest method of alleviating, if not permanently curing this formidable disease. Of course, we speak here of the chronic form of hydrocephalus; as to its expediency in the acute stage, we shall remark hereafter.

That the disease, when fully formed, will not yield to the ordinary modes of treatment,* and that the water cannot be evacuated, except by an operation, seems generally allowed; the only question, then, would appear to be, whether re-accumulation of the fluid can be prevented? We are happy that facts enable us to answer this question in the affirmative. In the 9th vol. of the Medico-Chirurgical Transactions, a case is given by Dr. Vose of Liverpool, where, though the dimensions of the head nearly corresponded with those of my patient, the operation was crowned with complete success. In this instance, a couching needle was used, and about four ounces of water evacuated at a time, at several different periods, until the whole was discharged, and the child was restored to perfect health. The water in this case, it may be said, was contained wholly between the membranes, or between the membranes and the skull, constituting what some denominate the external form of the disease, and that the operation would have proved unsuccessful had the ventricles also been filled. Whether it was or not, we have no certain means, perhaps, of judging; but even granting that it was, this would only be an additional argument in favour of the operation; for, if the cerebral organization is unaffected, we have certainly strong reasons to augur a favourable result. This can only be as-

* It is remarked by Bichat, that the lateral ventricles are lined with a production of the tunica arachnoides, which he judges to be a serous membrane. The water, however, which was discharged in the above case, did not coagulate by heat or acids, or show the other chemical qualities of that which, in inflammations, is usually poured out from such membranes. Why is it that the fluid effused between the membranes in meningic inflammation of the head, or sthenic hydrocephalus externus, often also contains no albumen?
certained in the living subject by actual trial. Supposing, however, that the internal part of the brain is likewise involved in the disease, it becomes an interesting inquiry, whether the same operation holds forth any rational hope of success? If the process of disorganization has not commenced, and the structure of the brain remains materially unchanged, we see no reason why it does not promise as much permanent benefit as in ascites, or hydrothorax. In both cases there is a probability of a re-accumulation of fluid; but that each is equally within the reach of remedial agents, we see no good reason to doubt. It is important, however, in cases of hydrocephalus to evacuate the water at an early stage of the disease, otherwise the chances of success are truly small, and the intellect becomes irremediably impaired, even if it be the means of preserving the life of the patient. As to the place of performing the operation, we should be guided by the degree of fluctuation, the state of the sutures, &c. Between the parietal and frontal bones, on the lateral part of the head, will generally be the safest place to operate; for if the opening be made between the temporal and parietal bones, there is a possibility of wounding either the temporal or the meningic branches of the external carotid artery. A scalpel, lancet, and grooved director, can be used, or what is still better, the trochar and canula; and if there should be an oozing from the wound, it will do no great injury, unless it become excessive, when it induces a dangerous degree of exhaustion. As to the time of operating, as a general rule, it should be done as soon as the fluctuation indicates effusion, and repeated at an interval of a few days, until all the fluid is evacuated. Of course, we are to be guided by the age, strength, general health of the patient, duration of the disease, &c.—circumstances which always modify our treatment, and cause exceptions to the general rules of the methodus medendi.

As to the degree of compression which should be used, after the evacuation of the water, we are to be governed by the previous history and present circumstances of the case. That a due degree of pressure would tend to stimulate the absorbents (that there are such in the brain I take for granted, though
they cannot be demonstrated,) is highly probable; but we are also to take into consideration the danger of disorganization, for by confining the cranial parietes, the pressure of the contained fluid is wholly exerted upon the soft cerebral contents; thus breaking down the substance of the brain, and converting it into a disorganized homogeneous mass. We are also to bear in mind the fact above mentioned, that a sudden removal of the water takes off the stimulus of distention, which would be followed by fatal sensorial exhaustion, were we not by bandaging to afford support to the collapsed integuments. We, therefore, come to the conclusion, that a moderate degree of compression is necessary, but that a greater degree would lead unavoidably to a fatal result.

Respecting the means of preventing the re-accumulation of the water, we should be governed by the same general principles as guide our treatment in cases of ascites and hydrothorax. If the water is collected between the membranes of the brain, blisters and other local stimulants, such as the preparations of ammonia, will prove highly efficacious in exciting the action of the absorbents, and thus removing the effused fluid; but if the water should be contained within the ventricles, then external irritation will only aggravate the disease. If there are symptoms of cerebral congestion, or inordinate determination of blood to the head, we should pursue a moderately antiphlogistic treatment, and endeavour to restore the balance of the circulation, by semicupia, blisters, and sinapisms to the lower extremities, with occasional cathartics of an active kind. If the absorbent system seems principally in fault, the ordinary diuretics should then be administered—particularly small doses of calomel. This course steadily persevered in, with a prompt evacuation of the water, as often as it accumulates, it is believed, furnishes the most rational hope of curing this serious and obstinate malady.

With respect to the propriety of an operation in the acute*  

* It is curious to note the discrepancies of opinion among medical writers with respect to the symptoms and treatment of hydrocephalus acutus. While some seem to be ignorant of the fact, that the brain is affected by...
form of hydrocephalus, we should not be, perhaps, justified in speaking very confidently of success. We should not, however, too hastily reject an operation, which comes to us recommended by Hippocrates, Forestus, Severinus, and Le Cat; nor, on the other hand, rashly adopt the same, when we find it censured by Morgagni, Fabricius, Hildanus, and Flajani. Here we are to bear in mind, that not only serum but coagulable lymph is effused within the cranium; in proof of which Golis mentions, that in one hundred and eighty cases, which he examined, he found lymph in every instance lining the ventricles and upper surface of the brain. Besides, there is reason to fear that the structure of the brain is irretrievably deranged by the inflammatory process, and that even should the water be evacuated, the result would, nevertheless, prove fatal.

all causes of intestinal irritation, and thus find hydrocephalus in every disorder of the bowels; others impute every affection of the head to sympathy, and, in fact, deny the very existence of this disease as idiopathic; but the truth lies in the middle—

Sunt certi denique fines
Quos ultra, citraque, nequit, consistere rectum.

Shall we, because a child cries, and squints, and rolls its head, and shows an aversion to light and noise, and has green slimy evacuations from the bowels, and dilatation of the pupils, pronounce it dropsy in the head, and proceed forthwith to open the temporal arteries, and blister the scalp, and "throw in" the calomel, and croton oil, and spirits of turpentine; and, if the child is so fortunate as to escape, draw up an elaborate history of the case, to show the public how to cure (secundum artem) this incurable disease? The following extract from the work of Hippocrates, "De Morbis," lib. vii. sec. v. shows very clearly that he understood the symptoms and nature of hydrocephalus quite as well as Golis, Cheyne, Beddoes, Darwin, or Whytt. "Aqua si in cerebro suborta fuerit, dolor acutus sincipit et tempora interdum que alias capitis partes detinet, subinde que rigor et febris, ocularum regiones dolor occupat, iique caligant; pupilla scinditur, et ex uno duo sibi cernere homines videntur, et siquis surrexit tenebrae ipsumprehendunt, neque ventum, neque solem sustinent, aures tinniunt, salivam et pituitam vomitione refundit, quando que cibos," &c.
The object in making the following remarks is partly from a belief, that they give a new view of the subject to which they relate; but chiefly with the hope of exciting investigation and inquiry upon a point of much practical utility. That writers, up to the present day, are divided in their opinions, might be a sufficient inducement for entering upon this examination; but when we see, in the very latest productions, false theories advanced, and most injurious practices thereupon recommended and pursued, it becomes a duty to show the defects of such doctrines; and for doing which, no apology of course will be required.

I shall consider this subject under three heads: first, on the formation and structure of the teeth; secondly, on their organization; and thirdly, on their nourishment.

The first rudiments of the teeth are visible as early as the second or third month of the foetus, and exhibit small soft pulpy masses, arranged in a depression or groove on the upper and outer circumference of the jaw bone (taking the inferior maxillary for example,) and connected by their upper surfaces to the lower surface of the gum which lays over them. Those pulps being very vascular and otherwise highly organized, gradually enlarge to about the size, and assume the form, of the body or crown of the future tooth. At a more advanced period, those pulps are obviously enclosed in membranous sacs; each sac being connected superiorly to the gum from which it receives its vessels, and from which it may be injected. The pulp lies loosely within its sac, to which it is connected only at its base, where the nerves and vessels may be perceived entering the pulp. The enveloping membrane, or sac, does not appear to be injected from the vessels going to the pulp; but, as before stated, from those which enter it from the gum. The bone of a tooth is formed upon the pulp; the enamel seems to be derived from the en-
veloping membrane. Ossification generally begins from two or three points on the incisores, and from two to five on the double-teeth; on the canine, from one point. In the teeth this process is evidently different from that by which the round or flat bones are formed. When ossification is about to commence in the former, the vessels in the centre of the cartilage which at first occupies the place of bone in those that are of a cylindrical shape, those vessels, I say, enlarge and admit red blood, from which the principle of bone is separated; and as the bony matter increases, the cartilage is absorbed; so that, in these cases, it will be perceived, that bone is formed from the centre towards the circumference. Flat bones are formed between membranes; ossification proceeding in rays from numerous points of commencement. As respects this process in the teeth, we may regard the pulps from which they are formed as occupying the same place, in reference to them, that cartilage does in reference to other bones. But in the teeth ossific matter is secreted on the external surface of the pulp, and proceeds towards the centre. It first appears in that direction in which the tooth passes through the gum; then spreads round the edges, and, having progressed somewhat, presents the appearance of a cap to the pulp. The enamel now begins to be deposited on this bony cap, at first being soft and chalky; and these two processes, the formation of bone and enamel, proceed: the deposition of bone being the more advanced of the two, until the crown of the tooth is entirely formed. Here it is, that the enveloping membrane unites to the base of the crown of the tooth, and its office of furnishing the enamel ceases, at the same time that the root of the tooth beginning to be developed, the tooth must necessarily rise in its socket. This brings the enamelled surface into contact with its enveloping membrane, on which it acts as a foreign substance, causing it to be absorbed; and in the same manner it influences every other opposing matter, until the whole of the enamelled surface has passed through the gum.

In a former paper, on the teething of infants, I have endeavoured, and I hope successfully, to establish the point, that
the enamel must be viewed, to all intents and purposes, in the light of a foreign substance, as respects the organized parts of the system, inasmuch as it is never found united to the soft parts by which it is surrounded. When the point of a tooth has emerged from the gum, a probe may be passed under the gum and all round the enamelled surface of that tooth, without any laceration whatever of the soft parts. It not unfrequently occurs, that one or more of the dens sapientiae is partially, and sometimes almost entirely, covered by the gum; and this too for years, from want of room to come fully out; yet the same operation of passing a probe all round the enamelled surface of the tooth and under the gum, without hindrance from, or injury to, or any inconvenience whatever, to the surrounding soft parts, may readily and at all times be done.

The formation, therefore, and gradual elongation of the root, is a necessary cause of a protrusion of the crown in an opposite direction, bringing the enamel in contact with parts capable of being, and which are consequently, absorbed; and the tooth will continue to rise, if uncontrolled from want of room, until all that which is enamelled has passed out of the socket and beyond the gum. If a tooth be taken out just at this period, the whole of the root, as to length, will be found completed, although it will be yet considerably open at the point. Every practitioner may have repeated opportunities of testing the truth of this observation, in the necessary removal of teeth for the purpose of remedying irregularities in their arrangement. It has been stated, that ossification of the teeth differs from that process in other bones, in commencing at the circumference, and proceeding towards the centre. It also differs in a much more essential particular: it will be recollected, that where bone is about to form for the purpose of occupying the place of cartilage, the central vessels in the latter, which, as belonging to cartilage, convey a colourless fluid, enlarge considerably and receive the red blood, from which is separated the elements for the formation of bone. But in the pulps ossification does not commence in their centre, but on their external surfaces; nor do we see the vessels
on their circumference enlarge and admit red blood, while
the deposition of bone is taking place; on the contrary, the
vessels which ramify over the surface of the pulp evidently
convey a colourless fluid, the bone of the tooth being an ex-
udation from the surface of the pulp, and which gradually
becomes hard.

In M. J. Cloquet's beautiful "Anatomie Descriptive," in
treating of the teeth, we find the following passage: "L'os-
sification des dents, est-elle due à une production organique,
ou bien n'est-elle qu'une sorte d'exsudation calcaire analogue
à celle qui forme les enveloppes des crustacés? Cette ques-
tion n'est point encore résolue, et divise les anatomistes les
plus célèbres."

From the view we have given of the manner in which the
vessels of the pulp are disposed, it will be perceived that we
incline to the latter of the two opinions, and the correctness
of the statement we have made may be readily tested in the
following manner:—Let a tooth, which is perfectly sound, be
laid open vertically, as soon as removed from the mouth,
but so cautiously as not to wound or lacerate the pulp. If
the latter be carefully separated from the internal cavity of
the tooth to which it adheres with a slight degree of tenacity,
its whole surface will present a smooth shining whitish ap-
pearance, but without any evidence that the vessels of the
surface convey red blood. Opportunities for such examina-
tions frequently occur in extracting sound teeth in cases where
they are too much crowded. If, on the other hand, we ex-
pose the pulp of a tooth, immediately after its removal from
the mouth, in which acute tooth-ache of a few hours' duration,
just previous to its being extracted, had been experienced, we
shall see the vessels of the surface freely injected with red
blood, and their branches ramifying in different directions.
Such opportunities of investigation are still more frequently
met with than the former, in cases of decayed teeth in which
the disease has progressed to the central cavity of the tooth.
In these last instances, the irritation of the pulp having
brought on inflammation, vessels, which in a healthy state re-
ceive a colourless fluid, now admit red blood, precisely as we
see in high grades of inflammation in the coats of the eye, villous coat of the stomach, &c. &c. Again, in removing decay, which has extended deep into the body of the tooth, it sometimes happens that the soft parts in the central cavity of the tooth become exposed. If the operation is done cautiously, so as not to wound this delicate texture, we have often an opportunity of examining the pulp in situ naturale, when it presents an appearance as if an opaque membrane veiled from your view the series of vessels in which red blood circulated, a florid hue being visible through this membrane.

The inference to be drawn from this, is, that the vessels which cover the surface of the pulp, separate from the arterial blood the principles necessary for the formation of the bone of the tooth, and which exudes from them on the surface of the pulp, adhering to the last formed layer of bone, where it gradually hardens, while its more fluid parts are taken up by the absorbents. In this way, layer after layer of bony matter is thrown out, until the teeth attain that degree of strength and solidity, which the nature of their functions require. The foregoing remarks are equally applicable to the formation of the second, as well as the first set of teeth. Intimately connected with the development of the teeth, are their sockets; and, therefore, a few words in reference to them may, without impropriety, be introduced in this place.

If we examine the jaw of a subject, at any time from shortly after its birth until about the fourteenth year, we shall find some one or more teeth whose bodies are entirely developed, but whose bony socket, or enclosure, has not yet begun to be absorbed; or in which this process has but just commenced at its upper part, for the purpose of permitting the tooth to pass out. It is in this bony socket, also, is contained the root or roots of that tooth, after the body or crown leaves it, to take its permanent situation above the gum. If we compare the length of that portion of the tooth usually found completed, as absorption of the superior part of the socket is taking place, we shall find it fully equal to that of its root or roots; consequently, the bony enclosure which the body of the tooth has vacated, will have quite sufficient
depth to contain its root or roots. In other words, the length of that portion of a tooth which projects beyond the bony socket, is fully equal to that contained within the socket. From this it is plain, the sockets of both first and second set of teeth are formed, rather before the body of the teeth are completed, and that the only essential change they undergo is, to contract a little upon the root, and form septems to such teeth as have more than one root. It is also to be observed, that as the sockets of the permanent teeth are first very much crowded, they become regular in proportion as the circle of the jaw enlarges.

Of the numerous topics which properly come within the scope of a work on Dentistry, few seem to have been examined with less regard to sound reasoning and practical observation, than that which relates to the organization of the teeth. Authors generally assert, that the teeth are as highly organized as any other portion of the human structure. Some even assert, that they take the lead in this particular; but the most moderate consider them at least entitled to be ranked with other bones of the frame, and in proof of this, bring forward innumerable instances of acute pain, inflammation, and swelling, which are constantly met within them, and the parts to which they are attached. In addition to which, Hunter's experiment of transplanting a tooth into the cock's comb, as well as from one human mouth to another, and its there adhering, is brought forward as conclusive evidence on this point. That the teeth are not inorganic is undeniable; otherwise, they would not remain in their sockets; but that they are not very highly organized, I think can be easily shown. It might be well, first, to give something of a definite meaning to the term organization, for the purpose of having a fixed point from which to start. With this view, it will be sufficient to observe, that it may be considered the principle of animate matter, possessing the power of resisting to a certain extent, decomposing agents, and the ability of repairing injuries it cannot resist. Whatever part or parts of our frame possess those properties, in their fullest extent, may, with fairness, be considered the most highly organized.
It is not necessary that I should digress so far from my subject, as to point out the different tissues in which the various grades of organization are to be met with. It is sufficient, that I confine myself to the teeth, and with this general observation, that the scale of organization decreases as density of structure increases. I shall go on to show, that the rank in which they are entitled to be placed, is the very lowest—that is, that they possess the combined properties of organized matter in a less degree, than any other portions of our structure. That this is the case, may be proved by contrasting them with any or all of the various materials of which the human frame is composed.

The first point of comparison shall be their respective abilities for repairing what may have been imperfectly formed. It is well known, that from some defect in the original structure of parts, they do not answer the purposes for which they were intended; and that in such cases they are removed, and new matter generated, as in scrofulous subjects, in whom portions of the bones of the extremities particularly, are cast off, and their loss supplied by new and more perfect materials—but in the teeth this is not the case. Parts of teeth imperfectly generated, retain that imperfect state until the teeth pass out from the gums, when those parts, not being capable of resisting decomposition, are soon removed by the combined chemical operations of food and saliva, and the mechanical functions of the teeth. It is by no means uncommon to meet with teeth, more particularly the molares, one or two points of which have just made their way through the gum, when, on examination, it is found that a probe may easily be passed some distance into the body of the tooth, through a soft substance, which, on being removed, has the appearance and consistence of chalk. I have even found this defect situated on that part of the tooth from which the gum had not yet receded. When such a tooth passes fully from beneath the gum, this soft chalky matter very soon becomes discoloured by food and saliva, and is gradually forced out by hard substances, being pressed into the cavity in masticating. This then becomes a receptacle where food and saliva lodge, and
by their chemical action, which, in some persons, is inconceivably powerful, constantly go on softening the bone of the tooth, by which the enamel becomes deprived of its solid support, and is broken away from time to time, in chewing, until the whole crown of the tooth is in this manner destroyed. Were the teeth as highly organized as other bones, they would, like them, throw off this imperfectly formed part, and re-form new and solid matter in its place, before the tooth had passed out from the gum; but such a process is not accomplished, even afterwards.

In the second point of comparison, we will suppose a tooth to have passed out of the gum, in a perfectly healthy, sound, and solid state, and that by some accident this tooth becomes fractured in any of its parts, or to any extent, does such a fracture ever unite? or is there any effort, on the part of nature, to a reparation, as is always the case in other bones? If nothing of the kind takes place, and it most certainly does not, it must be from a deficiency of organization to accomplish the process.

I have here compared the teeth only to other bones, because, if the latter appear higher in the grade of organization, it would be useless to carry on the comparison with the muscular tissues, or those of similar character. We will next examine what takes place in a tooth in which decay has commenced, no matter from what cause. Is there any tendency here in what is sound to separate from what is defective, as there is in all other parts of our system? Not the slightest. Common as is decay in teeth, the process by which other parts would get rid of such dead or disorganized matter, is never seen to take place in them; much less are they capable of regenerating new parts, for the purpose of repairing what disease may have removed. The fact is, did the teeth possess such a degree of organization as to be enabled to throw off decomposed parts, and restore such loss by re-forming new substance, it would be attended with immense and manifest inconvenience. Wherever such process does take place in other parts, it is always attended by a vast increase of arterial action and nervous excitement in the part itself, and its
immediate vicinity. From the exposed situation of the teeth, as well as the functions they have daily to perform, such an increase of sensibility in them, would by no means be desirable, if indeed it would be bearable. Such defects in the teeth are only to be remedied by artificial means, and in doing this, we have additional proof of the slight degree of their organization. The solid substance of the tooth may be cut into without creating any other sensation than may be fairly attributed to the impression, which the instruments make, being very readily conveyed through so dense a structure, to the very sensitive parts internally and externally, with which they are connected. The deeper the defect extends, the nearer you approach to those sensitive parts, and of course, the greater will be the patient's sense of pain. In those operations, when the defect has extended to the internal cavity of the tooth, or so near to it that the thin intermediate bone is not sufficiently strong to resist the degree of pressure necessary for retaining the filling in its place, thereby permitting pressure to be made on the soft parts within the tooth, violent pain, followed by inflammation and suppuration of those soft parts, are the consequences. In this case, the pain is very acute and almost constant, until either the cause be removed, the tooth be taken out, or suppuration and death of such soft parts have taken place. But in a large majority of cases, the unpleasant feeling occasioned by the removal of decay, the operator must be competent, and careful to distinguish from that above described. In the latter, the sensation is occasioned by the impression of the instrument being conveyed through a dense medium, to parts extremely delicate, and the sensation continues only while the instrument is in contact with some part of the cavity on which you may be operating. It is the constantly meeting with those sensations, that have induced writers to declare, that nerves pass in all directions through the substance of the teeth. If, however, these sensations be strictly attended to, and the patients questioned, it will be found much less acute than in the former instances; not so local, but involving the whole system, creating a creeping, chilly feeling over the whole surface of the body. If
the decay is so situated as to expose, by its removal, a portion of the internal surface of the enamel, and the point of the instrument be scratched over it, this disagreeable sensation, (for thus patients generally designate it) is greatly increased, and is described as being similar to that produced by the scratching of a pencil on a slate, but much more intense—indeed, in those of very nervous temperaments it is scarcely bearable. Now it is impossible that this feeling should be occasioned by the instrument cutting upon nervous filaments; as into the enamel no one has yet ventured to assert that they enter, and even if it should be contended, that the enamel partook equally of this distribution of nerves, how can it be accounted for, that when the latter is touched, the sensation should be so much more intense than when the impression is made on the bone? If it depends upon what I have supposed, then the enamel, as being most dense, ought to occasion, as is the case, a more disagreeable feeling than when the bone is scraped, which is less solid. While decay is progressing in the body of a tooth, a sense of uneasiness is every now and then experienced, which, although not amounting to pain, is nevertheless sufficient to awaken a suspicion, that all is not right, even when the individual is not aware of possessing any defective teeth. This, Doctor Hudson attributes, and obviously with great propriety, to the crowding of the decayed matter upon the surrounding dense structure: for as the solid bone becomes softened by the extension of the disease, the moisture with which it combines causes it to swell, by which it is made to occupy more space than in a healthy state. This enlargement of the diseased parts produces a sense of tightness upon those which are sound, or rather, this impression is conveyed through the solid parts to the delicate textures internally and also externally, with which the teeth are connected.

But the proof that the bone of the tooth is not so highly organized, as to have nervous filaments intersecting its structure, does not rest here. If the teeth were thus endowed, and that the sensation I have described were produced by the instruments used in cutting out decay, lacerating or cutting, or otherwise coming in contact with nervous filaments, then the
Trenor on the Human Teeth.

foreign substance employed for filling those cavities, would as certainly create the same sensations as did the instruments. But this is notoriously not the fact. In a very large majority of cases, a defective tooth, when properly operated upon, gives no more inconvenience afterwards, than if that tooth had never been in the slightest manner diseased. The few instances to the contrary, are such as I have before described; and those in which, although the pulp is not exposed, and that the intermediate bone is thick enough to resist the pressure of filling, yet it is so thin, and the conducting property of the metal with which the cavity of the tooth is filled, is so great, that the sensation of hot or cold substances, taken into the mouth, is conveyed with considerable force to the pulpy matter within the cavity of the tooth, where it excites momentary pain, and if neglected, may bring on inflammation. This, however, by proper treatment, can be prevented.

From the foregoing remarks it will be seen, first: That the teeth are not sufficiently organized to throw off imperfectly formed matter, and to replace it by what is sound and healthy, previous to the tooth's passing through the gum.—Secondly—that they have not the power of re-uniting, if fractured, even with the assistance of the soft parts, to which they are attached. Thirdly—that where decay takes place, no matter from what cause, after the tooth has emerged from the gum, it does not then possess the ability of separating this diseased from the sound parts, nor of replacing the decayed matter, if that have been removed by artificial means. Fourthly—that the reason given by writers for believing that the bone of a tooth is intersected by innumerable filaments of nerves, viz. their sensativeness when operated upon for the removal of decay, is more satisfactorily explained on the principal of their compact structure. Fifthly—that the result of the operations of filling the cavities of teeth with foreign substances, is not such as it necessarily would be, if those nervous filaments did in reality exist. And sixthly—no one has ever yet pretended that they could trace them entering into the bone of the tooth.
There is, still, another fact in support of the belief, that the teeth should be considered as holding, probably, the lowest grade in the scale of the organization of the human frame. It is, that when healthily and perfectly formed, they are the most indestructible portions of our system. In this respect, they make the nearest approach to inorganic matter, which, like the teeth, does not possess the power of reproduction.

From the character of the foregoing remarks it will be easily seen, that I do not admit of a higher grade of organization in the teeth, than is sufficient to cause them to form adhesions with the parts which connect them with their sockets. That for this purpose a very high degree of organization is not requisite, can be established by a reference to other parts of the system: as for instance, the hair, and particularly the nails. As respects these, there is very little other evidence of their being organized than that they adhere to the parts beneath, and this they do with quite as much tenacity as the teeth. They are adduced, therefore, as evidence, that a high degree of organization is not necessary to insure strong adhesions between different tissues; and that it does not follow, as a matter of course, that because the teeth are strongly attached to the membrane which lines their sockets, they are likewise highly organized.

As regards the nourishment of the teeth, each writer seems to have copied his predecessor on the subject, without seeming to have taken much pains in testing the validity of the doctrine, or examining the soundness of the reasons on which it is based. It is asserted by authors generally, that the pulpy matter, met with in the central cavities of the teeth, is the source from which the teeth receive their nourishment; and some also add, that the membrane, connecting the roots and sockets, is likewise another source of their nutrition. It is a circumstance of not uncommon occurrence, to meet with persons of about the age of fifty, the cutting edges of whose front upper and lower teeth, instead of overlapping, as is most frequently the case when their back teeth are brought into close contact, meet each other. The consequence is, that about the age above mentioned, the upper and under front
teeth will be found worn down very short; and, on examining their grinding surfaces, it will be perceived in their centre that the bone has a more transparent appearance than elsewhere. This transparent bony substance fills up what was formerly the central cavity of the tooth, and in which was lodged the pulpy matter met with in teeth. In the instances to which I now allude, these pulps had continued to deposite bone, and to decrease their own bulk by absorption, in proportion as the teeth become worn down, until those central canals become finally and entirely obliterated. Had not this deposition of solid matter taken place, the nerves, &c. &c. of which these pulps consist, must have become exposed by the wearing down of the teeth, and the consequences, of course, are very obvious. It so happens that those teeth, notwithstanding that they are thus deprived of what writers assert to be their source of nourishment, still not only retain their situation as firmly as before, but in every respect perform their proper functions with as much certainty and success as if the internal canal and its usual contents were fully in existence.

There is yet another circumstance of still more common occurrence. Every practitioner is now and then called upon to treat cases of decayed teeth, in which the disease has made such progress as to cause the contents of the internal canal of the tooth to become exposed by its removal. To remedy the difficulty which here presents itself, a variety of operations have been, by different practitioners, resorted to for the purpose of destroying the sensibility of those soft parts, so as to enable them to fill the cavity of the tooth with some suitable substance. With the exception of the mode introduced many years ago, by Doctor Hudson of Philadelphia, and most successfully practised up to the present day, the means had recourse to have failed, in a majority of cases, to deaden the sensibility of those internal parts, and by filling in upon them, in this state, violent irritation, followed by inflammation and suppuration, have been the consequences; under which circumstances, those practitioners have considered it most advisable to extract such teeth, from an apprehension that more serious evils might ensue. Still, in a sufficient number of instances, do they succeed in altogether destroying this
delicate pulpy substance, and are then enabled to fill the cavities with some of the metals usually employed for this purpose, without such teeth occasioning to the patients further inconvenience; and in this state they last just as long, and are quite as useful as if the decay had not extended so deep as to require the destruction of what writers contend to be their source of nourishment, and without which, say they, they ought not, nor cannot be retained in the head.* There are, within my own knowledge, innumerable cases of this kind treated by Dr. Hudson, ten, fifteen, and twenty years ago, and which are, at the present time, in a perfect state of preservation, and in every way as useful as any other teeth. In the common practice of setting artificial crowns on roots of teeth, and previous to which this nourishing principle, as authors denominate it, must be removed, we see those roots retained in their sockets five, ten, and fifteen years, and are then lost, not from their having been deprived of this means of nourishment, but from foreign matter getting into the cavity from which the pulp had been removed, and decomposing, softening, and destroying the root from that towards the outside, until finally the decay extends to the surface to which the gum and membrane of the socket are attached. The gum now becomes diseased, soft, and spongy; and from slight irritating causes, as the application of cold, &c. a high degree of inflammation is excited, which most frequently terminates in suppuration; and a repetition of these stages ultimately causes the attachment between the root and its socket to become gradually destroyed. The former getting looser and looser, finally drops out; or, in order to be relieved from the pain it occasions, and the offensive breath and other unpleasant effects attending it, the patient generally prefers expediting its loss by an operation. For the purpose of putting in a still stronger light the fallacy of this doctrine, I introduce the following interesting and satisfactory case from my professional note book.

August 1st, 1825. Case of Mr. L. When a child he had had the misfortune to receive a violent blow on the mouth,

* See Koecker's work on Dental Surgery.
which almost knocked out his two central upper incisor teeth, and the left lateral incisor. Being replaced, however, they became completely fast again, after the inflammation and swelling, resulting from so violent a blow, had subsided. The inflammation of the soft parts, within those three teeth, had been so great as to cause their entire death, and in a short time they became very much discoloured; but, as to usefulness, remained quite as much so as if no accident whatever had happened to them. Their situation was such, with respect to the front under teeth, that in the course of some years after the accident, the upper or cutting edge of the lower incisors came in contact, in chewing, with the cutting edges of those discoloured teeth, which were consequently worn away, year after year, until about two years ago, when the central cavity of the right incisor, containing the dead nerves, blood-vessels, &c. became exposed. Into this cavity food and foreign matter would necessarily be forced during every meal; and in a very short time, a considerable swelling formed at the root of the tooth. By probing the cavity of the tooth with a toothpick, its contents were so far removed as to admit a free passage through it, by which the pus collected, in consequence of the inflammation, was discharged. In this way it went on for nearly two years, there being a constant exudation of pus down through the tooth. Whenever foreign matter chanced to get jammed tight within the tooth, so that the evacuation of the pus was prevented, a swelling of the external gum would take place, opposite the end of the root, which would continue to increase until it broke, and the pus, prevented from pursuing its usual course by the food, &c. collected within the tooth, would thus make itself an opening. By removing the extraneous matter from the inside of the tooth, so as to permit the constantly collecting pus a free passage in this way, the external swelling might always be prevented. The continuance of the discharge, I have no doubt, was owing to the irritation of food and moisture, &c. which constantly found its way through the tooth to the seat of the ulcer. Besides, this collection of foreign matter was constantly enlarging, by ocasioning decay, the cavity of the tooth, and worse than this,
it was excessively offensive. On visiting me, Mr. L. observed, that he had a short time previous placed himself under the care of an eminent professional gentleman, who, after performing sundry operations, declared, that nothing could be done to preserve this tooth, and recommended, therefore, that it should be extracted; that the large incisor, adjoining, should be cut off even with the gum, and that to this root should be attached the crowns of two teeth to fill up the vacant space. Mr. L. not being willing to submit to such a course of proceeding, his dentist said he would make an attempt to save this deficient tooth. He, therefore, cleaned out its cavity, which he filled with cotton, and Mr. L. was dismissed with the understanding that he was to call the next day. As might have been expected, the exterior gum began very soon to swell and enlarged so rapidly, as to create in Mr. L.'s mind considerable alarm. In the course of a few hours, therefore, he visited his dentist, with his face greatly swollen and disfigured; who, evincing even greater apprehensions than the patient, pronounced it impossible to save the tooth; and that if it were not forthwith extracted, he greatly feared it would bring on a disgusting and dangerous disease. Mr. L. left his professional adviser to consider on what had been proposed; but not feeling convinced by what had been stated to him, he called upon me for my opinion, and on examination I had not the slightest doubt but that the tooth could be effectually saved. I was accordingly requested to undertake the operation. Having cleaned the cavity very accurately, not only from all foreign matter, but likewise from every particle of decay, I filled it very carefully with gold, taking care to avoid irritating the ulcer; all of which was accomplished without occasioning any particular uneasiness. The ulcer was then treated as an abscess would be if located in any other part, viz.—by making an artificial opening, so that the pus would have free egress as fast as it might form. In this way I expected the sore would heal up from the bottom, and the result justified my expectations.

August 2d—afternoon. He had taken cold last night by sleeping with his room windows up—a change having taken
place in the weather. It is rather tender and somewhat inflamed round the socket. Directed him to take a full dose of salts, a light vegetable diet, and water only to be drank. In a couple of days the effects of the cold had passed off. Everything advanced favourably, and at the end of the second week the ulcer healed. Since then I have seen this gentleman repeatedly, and as lately as within the last two months, and he continues to enjoy the full use of this tooth without inconvenience or drawback in any shape or form. It is about thirty years since Mr. L. met with the accident of the blow; and from the particulars of the case, it is obvious that the three front teeth referred to, have been deprived, all that length of time, of their medullary matter, so far as it could be of any use to them; and no one can believe that, if their nourishment came from this source, and that they depended for their existence upon it, they could have remained in their present state of preservation and usefulness in the head, and with every reason to expect that they will so continue.

We shall find this point much elucidated by a comparison with what is known to take place in the growth of the flat and round bones. It is well known that the parts from which they are formed are entirely absorbed in proportion as ossification progresses, and at an early period of life altogether disappear; of course, can neither be the means nor medium by which those bones are nourished. So, likewise, is it with the pulp. It is intended for the formation, not the nourishment of the teeth; and in proof of this, as already stated, it is often totally destroyed by artificial means, intentional as well as accidental; and moreover, the canal, in which it is usually found, is frequently filled up by bony matter, without any hindrance to the usefulness or durability of such teeth; consequently, the pulps can neither be the source nor medium of their nutrition. From all this I think the inference is fair, that the source from which a part receives nutriment, is independent of that from which it is formed; that in the teeth the pulp is intended exclusively for the latter purpose: and that the necessary consequence of its destruction, is merely
that there is an end to any further formation of bony matter in such a tooth.

We have yet to examine whether this office may or may not be performed by the membrane by which the roots and sockets are connected. If we reflect that a large, I may say the largest, portion of a tooth is fully developed without this membrane being connected with it, it will readily be conceded that the latter cannot be the source of nourishment to the former. It is to the root of the tooth, and the root only, that this membrane adheres. Now the formation of this part does not commence until the crown is entirely completed; of course, if the crown requires to be nourished, it must obtain it from some other source; and that the root is equally independent, we shall presently give pretty conclusive reasons.—With this view I shall go on to show, first, that there is good reason to believe that the teeth do not require nourishment; and secondly, that there is no evidence that they receive it.

Our first inquiry, then, would be, what can be the object in nourishing any particular part? It must be, first, to provide for the increase in growth of that part; and secondly, for the renewal of such portions as may be taken up into the general system, to be then and in different ways disposed of; and this renewal and removal of parts can only be accomplished by means of arteries, veins, and absorbents, and, of course, nerves.

It is a general law of the animal economy, that from infancy to manhood all parts of our system should constantly augment by the accession of additional matter to that already formed; that during the middle period of life, the chief change is that of increase of strength and solidity, and very generally an enlargement in the bulk of the soft parts; and that, as old age advances, there is very considerable and perceptible shrinking and diminution of its several parts. Now, the only exception to this otherwise universal law, is the teeth. As soon as they have attained their full form, they never afterwards undergo any change, except what may be occasioned by accident or decomposition. In childhood a set of teeth is provided, few in number and small in dimensions; each tooth
of which requires from sixteen to twenty-four months for its entire development; after this it neither enlarges or decreases by any healthy action going on within itself. It is true, its root is, in the course of some years, absorbed; but this process is effected by vessels belonging to the soft parts in its vicinity. As this set does not keep pace with the growth of the frame, vessels for the purpose of its increase are unnecessary. But we are furnished with a second set when the system has so far enlarged that the first set would no longer be useful. Each tooth of this set requires a period of time for its full growth, which varies from seven to ten or twelve years; and when they have attained full maturity, no other change ever takes place in them of a healthy character. Now, I have already shown that, for the purpose of bringing the teeth to their full growth, the pulps, and they only, are necessary; of course, another set of vessels for the same purpose, (no matter where situated,) would be altogether superfluous.

As to the second point,—viz. the renewal of such portions as may be taken up into the general system—such a process would require not only vessels conveying the principles of nutrition, but absorbents likewise. But as such a system of vessels has never yet been detected, either by the closest examination, the most minute injections, or the changes which present themselves in that structure when diseased, it is not possible to conceive from what course of reasoning the inference of their existence is drawn. It may be objected, that there are other tissues of the system in which the most ingenious investigations have failed to establish the existence of any such vessels, nerves, &c.; but which, when diseased, exhibit the strongest evidence that they are thus endowed—as, for instance, ligaments, cartilages, tendons, &c. This will be readily admitted; but does the enamel or bone of the teeth, when decayed, present those marked symptoms which the diseased tendons, &c. do? By no means: they undergo no one of the stages of inflammation, suppuration, or exfoliation—nor does any other indication present itself of their being organized. If the decay has extended so deep as to occasion derangement in the medullary substance contained in the cen-
tral cavities of the teeth, then this medulla will be found to
develope the same phenomena which other structures of equal
delicacy exhibit; but the bone of the tooth undergoes no
other alteration than a gradual decomposition and extension
of the decay.

It may be urged against this statement, that portions of the
roots of the second set of teeth are occasionally found to have
been absorbed, particularly in the unnatural operation of
transplanting the teeth; and in a somewhat similar proceed-
ing, though by no means so objectionable a one, that of ex-
tracting a tooth entirely, or but partially raising it, and then
returning it into its socket. In almost all cases of this kind
it is found, that in from one to four years the tooth begins to
get loose; it then occasions irritation in the soft parts of the
socket, followed by inflammation and so much pain, that from
this circumstance alone the tooth is obliged to be extracted, when
it is found that the root is partially or to a considerable extent re-
moved by the absorbents. This absorption, however, is unques-
tionably effected by vessels existing in the membrane lining
the socket of the tooth, not in the tooth itself; and which
vessels continue to perform the same office, after the extrac-
tion of the tooth, on the alveolar socket, until this likewise is
entirely removed. Fox states, as a proof that absorbents ex-
ist in the teeth, that sometimes a considerable portion of the
internal parts of teeth have been found removed by ulceration.
This, if not altogether doubtful, is certainly of very rare oc-
currence; but were it very commonly to happen, it would
fail in establishing the point. If absorption has really been
found to have taken place, it was undoubtedly performed by
vessels belonging to the pulp, which is unquestionably thus
organized, for purposes of its own nutrition and removal, for
it must decrease in size in proportion as the bony substance
increases. This absorption of the pulp is a natural, healthy,
and necessary process; that of ulceration, a diseased one.
Now the latter must be preceded by inflammation, which of
itself, even in a moderate degree, will occasion the death of
the pulp in which it has arisen, more readily than a much
higher grade of inflammation would in any other structure
throughout the system. The reason of which is, that in inflamed parts there is always a tendency to swelling; in the pulp this tendency is completely counteracted by the unyielding nature of the bony structure by which it is enclosed; compression, of course, takes place; excessive pain is occasioned; the circulation is interrupted, and entire death of those parts speedily ensues; and they then become incapable of acting on the bone of the tooth by ulceration. I have frequently examined teeth for the purpose, but have never met with any appearance that could, in the slightest degree, sanction the assertion of Mr. Fox. It is true, I have found the internal cavity of the tooth filled with an unhealthy offensive sanies, which was merely the medullary matter in a totally disorganized state; and I have had cases of this kind in which this matter had been confined in the canal of the tooth for many years, as in the upper teeth, but no indication that ulceration had ever commenced in the bone of the tooth, could be detected. Surely, if absorbents existed in this bony substance, there would have been some appearance of their attempting to make an opening for the discharge of what must have proved to them so very irritating: at least, we find this to be the invariable rule in all parts where absorbents unquestionably do exist. The most ingenious argument to be met with in favour of what I am combating, may be collected from the following quotation from Fox, whose work is undoubtedly entitled to the first rank of standard productions. After giving cases of ulceration, already alluded to, be goes on to state: "Besides these instances, the effects of absorption in the tusks of elephants are often seen; sometimes in sawing these bodies, iron balls, spear HEADS, &c. are met with, which have been forced into them in attempting to kill these animals. These extraneous substances are always found loose, having a space in which they can be moved. This could never happen, unless there were some action going on, by which part of the bone could be removed; and there is no other mode by which it can be effected, but through the medium of the absorbent vessels."
In the first place, a greater similarity should be proved between the tusk of the elephant and a human tooth, than possibly can be done, before the laws which are known to govern one, should be inferred as governing the other; but waiving this point, Mr. Fox had only to call to mind the daily operation of filling cavities in the human teeth with foreign substances, as gold and tinfoil, &c. which are retained there without any loosening from the operation of absorbents, to be convinced that his parallel was in some way or other defective. But it can be easily shown, that even as applied to the elephant's tusk, the inferences he has drawn from his premises are erroneous. If those foreign substances were a cause of action in the absorbents, why should they cease their operations as soon as the foreign bodies are permitted to lie loose in the cavities? for, as they must touch somewhere, the absorbents should still continue their labours, until these foreign bodies be entirely excluded from the tooth. Such, at least, are the general laws by which this system of vessels are elsewhere governed. Without any great trespass upon the imagination, we think a more philosophical and satisfactory solution of this problem may be given. The velocity with which those iron balls, spear-heads, &c. must have been driven to enter so solid and dense a structure as the tusk of the elephant, must have created in those substances a pretty high degree of heat, which necessarily produced, in the metallic bodies particularly, more or less expansion. Being lodged in the tusk, however, and having parted with their caloric, they of course returned, when cool, to their original dimensions. In this state it would be found that they no longer filled as large a space as when they had entered.

We might go on to show, by referring to the experiments of Hunter, that they gave a stronger sanction to the views, doubtfully expressed by this distinguished physiologist, than his cotemporaries, or those who have succeeded him, were willing to admit. But it does seem that the points intended to be established are too fully and clearly made out to require further elucidation. If those views be correct, the obvious practical inferences to which they lead, of the certainty of
preserving teeth, which, it has become the fashion of writers of the present day to condemn, may possibly be a sufficient remuneration for the trouble of their perusal. I cannot flatter myself with the idea that I have not fallen into errors, or expressed opinions which will bear the test of strict criticism. I would, nevertheless, court a candid discussion of the points treated upon as the most certain means of arriving at correct knowledge, of giving an elevated standing to the profession, and of conferring benefit on the public. With such feelings and wishes, I commit these remarks to the consideration of my professional brethren.

Art. IV. Case of Un-united Fracture of the Os Brachii, successfully treated. By J. Kearny Rodgers, M. D. Surgeon of the New-York Hospital.

George Westerfield, aged 15 years, was admitted into the New-York Hospital, July 25th, 1827, with an un-united fracture of the right Os Brachii, about two inches above the elbow joint.

The accident occurred in the State of Ohio, December 1824, by the limb of a tree falling on him. From the account given by the patient it appears that a medical man reduced the fracture immediately, and placed splints on the arm, which was then worn in a sling. At the expiration of twelve days the dressings were removed; and the union which he seems to have expected not having taken place, the ends of the fractured bones were rubbed against one another, and the splints re-applied. This treatment was persevered in several months.

In June 1825, a seton was passed between the ends of the bone and withdrawn at the end of a week; splints were still kept on the parts for four weeks.

No union following this treatment, nothing further was done until his arrival in New-York, in June 1826. In the latter end of which month, a seton was again passed by a surgeon
of this city. It was retained six months, during which time, motion of the parts was prevented by splints to the arm.

The seton having been faithfully tried and removed without any beneficial result, the patient almost despaired of ever recovering the use of his arm; but still was willing to submit to any expedient that might be proposed as likely to bring about an union of the broken bone. It appeared to me, that but one other mode remained which held out any prospect of success—Mr. White's plan of sawing off the ends of the bone, and reducing it to the state of a recent compound fracture.

I accordingly performed this operation on the 31st of July. An incision about three inches in length was made through the integuments of the arm, on the outer edge of the biceps muscle down to the bone. The lower end was easily turned out of the wound, and half an inch sawn off with an ordinary saw. The upper end could not be turned out in the same way. Having, however, guarded the soft parts by a thin slip of wood, passed down on each side to the bone, about half an inch was removed by a circular saw. I now found it impossible to bring the ends of the bones into contact, in consequence of a slip of muscle passing between them. I divided this, and although they were then placed in apposition, they soon regained their former bearings—an inch and a half asunder.

Apprehensive that I should be foiled if the bones were thus far apart, I drilled a small hole through the shell of each end to the medullary cavity. Through these holes a wire was passed, and the ends of the bone were retained in coaptation. The ends of the wire were drawn through a canula which remained in the wound. The os brachii was much softer than natural, and excited my fear, that this state would prevent any ossific deposit.

The wound was dressed with adhesive straps and covered with lint; the arm was placed on a right angled splint, properly hollowed out.

August 15th. The canula fell from the wound with the loop entire, so that the bone must have broken away. The bones, however, continued in a proper position.
Not expecting bony union for some time, I scarcely examined the state of the bones for a month. During this time the wound had almost healed. Afterwards I examined it about once in ten days.

Oct. 5th. Sixty-nine days after the operation, I was gratified to find that the bone had united; but was unwilling to test its strength by force.

Oct. 16th. On examining the limb after an absence of several days from the city, I found the union firm.

For two months after the operation, my patient was not allowed to move from his bed, and during this time motion of the affected arm was prevented by splints. To the unyielding firmness with which my patient seconded my exertions, I attribute the success which crowned this operation.

Dec. 3. The patient was presented to the clinical class, with every motion of the arm perfectly regained.

The os brachii is shorter by two inches than that of the sound side.


Art. V. Remarks on the Treatment of Enlarged and Indurated Tonsils; with a proposal for a new mode of removing them and Polypous Tumours. By Alexander H. Stevens, M.D. Professor of Surgery in the University of the State of New-York.

The term Scirrhous, as applied to enlarged tonsils, is improper: these glands are not subject to cancerous disease, but become enlarged in consequence of repeated attacks of scrofulous or other inflammation. When by their bulk they impede deglutition or respiration, especially during an attack of inflammation, to which, in this state, they are particularly prone, they become the objects of surgical treatment.

In cases of acute inflammation as soon as considerable tumefaction has taken place, I have found nothing so effectual in affording relief as free puncture or scarification, and even in a state of chronic enlargement, unattended with hardness,
repeated scarifications are often sufficient to reduce them to their natural size. There are cases also of indolent soft enlargement, occurring most frequently among scrofulous children, in which the enlarged tonsils gradually lessen as they acquire age or vigour of constitution. It may, therefore, be proper, in many cases, to postpone the operation. M. Dupuytren, however, with some plausibility, advises the operation to be performed early, because, as he alleges, the difficulty of respiration causes the children, in such cases, by calling the muscles of respiration into powerful action, to grow up with round shoulders, and a depression of the sides and front of the chest. He advises the children to be put into a pillow-case, and held on the lap of an assistant during the operation.

Whatever opinion may be formed of the notions of M. Dupuytren on this subject, there are cases in which the tonsils become so much enlarged, and present such serious impediments to respiration and deglutition, as to require surgical treatment.

The range of cases in which scarification is proper and applicable, as an effectual means of removing chronic enlargement, is, I apprehend, very limited: cauterization with caustic is still more uncertain and tedious in its results; while cauterization with the hot iron is justly banished from modern surgery. Of the remaining operations the French surgeons very generally employ the knife or scissors, in disregard of the danger of suffocation, witnessed by Moscati and Wiseman, from a partially separated tonsil, during an operation interrupted by efforts to vomit, falling into the rima glottidis; or rather avoiding that danger by cutting from below upwards, at the risk of wounding the velum pendulum palati, and of making an irregular section for want of space to use the knife; difficulties which Boyer proposes to avoid by dividing half the gland from below upwards, and the remaining half from above downwards. But the occasional occurrence of hemorrhage, sometimes fatal, according to Sharp, the repugnance which patients have to the use of the knife, the removal of the objections to the ligature by the improved me-
Stevens' treatment of Tonsils.

Method of employing the double canula suggested by Professor Physick, have united to establish in this country, a preference for that operation, which is likely to be as permanent as it is well founded. I must refer to the paper of Dr. Physick as containing a mode of practice by which the tedious and disagreeable presence of the canula in the mouth for five or six days is avoided. "It has hitherto been my custom," says the Doctor, "to allow the instrument to remain thus applied," [a double canula, with iron wire embracing the base of the tonsil, and tightened by drawing one end with a pincers, while the other is attached to one of the arms of the canula] "for twenty-four hours, with a view of destroying, completely, the life of the enlarged gland. I am however of opinion," he adds, "that a much shorter time, as six or eight hours, would be sufficient, which I propose soon to ascertain."

The separation of the dead tonsil he leaves to nature, and generally it does not take place until a lapse of several days, during which time the patient is annoyed by the excessive savor of his breath, with consequent disgust for food, and when taken off, some of the tonsil is occasionally found to have maintained its vitality.

I have practised the operation as recommended by Dr. Physick several times; and although my first trials were unsuccessful, as well as those of others which I witnessed, I finally succeeded. I have not found it easy to hold so slight an instrument as the double canula with sufficient steadiness to draw the loose end of the wire with the requisite firmness to strangulate, completely, every part of the tonsil. The operator is liable to jerk the wire rudely, and exercise a painful traction on the gland, and when he supposes the object sufficiently accomplished, on a closer examination a portion of the tonsil next the attached end of the wire is seen to be slightly red, and not of the cream-white colour that denotes an entire interruption of the circulation, or perhaps this appearance occurs after a lapse of some hours, when the strangulating pressure is diminished by the wire being buried in the substance of the part.
Such were the results of my first trials, but finally, with great attention, I was able to destroy the gland in twenty-four hours, and by one tightening of the wire. But the wire frequently broke under the force necessary for the purpose, and I was led to consider what further improvement, if any, the operation was susceptible of, and my views were directed chiefly to the following objects—

1. That the traction on the wire be made in a more steady, gradual, and measured manner, so as to avoid the risk of pulling the gland while tightening the wire: for this, the power of a screw seemed well adapted.

2. To make pressure alike on both sides of the gland, and to diminish the risk of breaking the wire by drawing upon both ends instead of one; and to secure the latter object still more completely, by taking off the sharp edges of the canula over which the wire makes a short turn, by making the canula trumpet-shaped. With these views, I have constructed an oval-shaped single canula, about four inches long, receiving through its whole length a steel male screw, with an oval shoulder near one end, which is perforated with a small eye; to the other end is fitted a small female thumb-screw. The eye receives two ends of iron wire well annealed and tough, an inch of such size that weighs a little more than one grain. I take of this wire a piece three inches and a half in length, and passing one quarter of an inch of either end in contrary directions through the eye of the screw, I twist them upon each other. This leaves a circle of an inch diameter, and the wire, when drawn straight, was one and a half inches from the eye of the screw, which when fitted to the canula was exactly flush with it. It was easy to see how such an instrument might be applied so as to act with certainty, ease, and regularity. Such was my plan for effecting a perfect strangulation.

I was then led to reflect what further effect might be the consequence of that prodigious force which the screw exerts, and which a small wire under proper precautions supports, and it occurred to me that the wire might slightly cut the tonsil; at any rate, it might cut the vessels which were going
into it, and even if it did not, they would be closed in a few hours by the effusion of fibrin beyond the circle to which the wire was applied, and that under these circumstances there would be no necessity of waiting for the gradual separation of the eschar, but that the wire might either be screwed up so tight as to cut it off, or the neck might be severed with a scalpel or scissors without danger of hemorrhage. With these views, I had constructed the instrument represented in the following cut:

A. A circle, three inches long.

B. The ends of the wire passed through the eye of the screw, twisted upon each other.

C. The trumpet-shaped end of the canula.

D. The screw in this part made to fill the cavity of the canula.

E E. The canula seen flatwise.

G. The male screw, one inch and a half long.

F. The female or thumb-screw. The holes near the circumference are made to lighten the instrument.
Stevens' treatment of Tonsils.

The first case to which I applied the instrument was that of the daughter of a medical gentleman of this city, now deceased, in whom the left tonsil was so much enlarged as entirely to hide the uvula. The operation was done in the presence of Dr. Thomas Cock and several of his and my pupils. The gland was drawn out by a small double hook passed through the wire, previously inserted under the lower edge of the tonsil. The hook was now given to an assistant, while with the forefinger, I depressed the tongue and adjusted the wire to the base of the tonsil, and drew the screw to which the wire was attached directly out from the canula, until the wire was buried in the gland. The thumb screw was then passed rapidly down, and it was made to act until only one half of the length of the wire was left around the tonsil; the rest being ascertained, by measuring the distance of the outer end of the screw from the outer end of the canula, to be within the canula. The usual salivation, but not vomiting as frequently happens, followed. The operation was done at half past ten, A.M.

At three, P.M. Dr. Cock was kind enough to see the patient, and gave the thumb screw three turns, by which the length of the wire around the tonsil was reduced to five-sixths of an inch in diameter.

At six, I gave three turns more; at eight, three turns more—the wire was now reduced to half an inch. At ten o'clock, as the wire did not break, I began to reflect upon the best mode of detaching it, as the tonsil now hung by a peduncle only one-sixth of an inch in diameter, which I was determined to divide.

I purposely turned the thumb screw, therefore, until the wire broke—separated it, and with a small hook formed by bending the point of a probe, I seized the tonsil and snipped it off with a pair of scissors. Scarcely a drop of blood flowed, and the patient began immediately to satisfy the cravings of hunger, having been prevented from swallowing by the presence of the canula. Thus the extirpation of the tonsil was effected in less than twelve hours.
Upon examination, the gland had undergone no decomposition, but was evidently hardened and compact in its structure, in the part which the wire had strangulated. The neck divided with the scissors was smaller than the barrel of a goose quill, and was clearly distinguishable from the other parts of the gland.

The second case in which I applied the wire with the instrument I have described, was that of a lad of the name of Stewart. I removed it, and cut the neck at the expiration of eight hours. About eight ounces of blood was lost, which with the pain caused by the wire and exhaustion for want of food, caused him to faint.

After a short time, when the ulcer left by the division of the neck of the gland had cicatrized, I removed the second in the same manner as in case 1st. Twelve hours, therefore, I conceive to be the time at which may be safely divided the neck of the gland.


At no period within the space of fifteen years has intermittent fever prevailed so generally throughout the state of New-York, as during the last two years. For a long time previous, it had become almost a stranger in the southern and eastern parts of the state, except in some senny districts. Together with the pleurisy, it disappeared on the irruption of the pneumonia typhodes or winter fever, which commenced in the year 1808, in the state of Connecticut, and spread generally several successive winters. This scourge of the country and of districts noted for salubrity, overrun the land, as Dr. North observes, "like a flood of mighty waters," bearing away the athletic, the principal men, and heads of families.

That the pneumonia typhodes was produced by a modi-
fied combination of the causes of intermittent fever and pleurisy, I shall not venture to assert; but that it supplanted these diseases is certain: and it is equally certain, that it exerted a modifying influence on all inflammatory affections, and rendered the use of the lancet precarious on all occasions. It has at length disappeared, and intermittent fever has again become common, and demands the attention of every physician.

Among the sciences, that of medicine must continue to advance as long as the mind of man retains its distinctive faculty of progression, and enjoys the privilege and opportunity of unrestrained investigation. It has been satirically said, that the science of medicine progresses, but moves in a circle. Should the force of the satire be applicable to any part of our interesting study, it must be to intermittent fever; for it cannot be denied that we are as ignorant of its true theory as was Hippocrates himself. Recently, however, a new theory of fever has sprung up, of which M. Broussais is the reputed author, although it was long ago clearly delineated by Gen-gii Baglivi, in the year 1758. It attributes all fevers, formerly denominated idiopathic, to inflammation of the mucous membrane of the stomach and intestines. Notwithstanding all that the brilliant genius of M. Broussais and his disciples may suggest, intermittents will ever remain a rock on which the system must split, and like the visionary theories of Cullen, Brown, Darwin, and Clutterbuck, it must either fall or suffer material modifications.

Neither have we, since the days of Sydenham, made any material improvement in the treatment of intermittent fever. The gastro-enteritic theory brought forth its legitimate treatment, and leeching the abdomen, and mucilages and dilution, or "the medecine expectante," usurped the place of cortex-cinchona, which is, of course, utterly condemned. This powerful article, used as it generally is, indiscriminately at all periods, is not wholly unworthy of the opprobrium so freely bestowed on it by the anti-ontologists, as the disciples of Broussais style themselves. The quinine in particular, having its power so much more concentrated, is daily
committing evils of no small magnitude. Its being so easily obtained, and the general idea of its being a specific, or something exactly adapted to the cure of agues, contribute much to its untimely use; the consequence will be and even now is, a kind of re-action, and its value will suffer an undue depreciation. From the opportunities so amply afforded of late, some improvement in the principles of the therapeutics of Intermittent fever must have suggested itself to the minds of such as are not wedded to favourite theories. This is all I shall attempt in the following Essay.

Causes.—As to the remote causes of intermittent fever, I have nothing material to add to what I have already advanced in the 19th number of this Journal; nor have I there advanced any thing I wish to retract. The division of the remote causes into predisposing and exciting, and the propriety of adhering exclusively to this division, is, in my opinion, unquestionable. While the predisposing causes are as numerous as are the means of interrupting our health, there is but one set of exciting causes, and this includes all miasmatic exhalations from marshes, soils, &c. In proof of this position no higher authority is necessary than Dr. Gregory and his accomplished commentator, Dr. Potter. Dr. Gregory's opinion may be gathered from his System of Practice, volume 1st, p. 119 et seq. on which Dr. Potter thus comments—"But we may safely deny that that particular assemblage of symptoms, flowing from the product of vegetable putrefaction [intermittent fever], has ever been observed to have arisen from any other source." Miasm, then, being the only exciting cause on all occasions, it certainly cannot alter the principle of their action, whether the predisposing causes operate antecedently or subsequently to their introduction or application. The exciting causes cannot produce the disease until the predisposing have prepared the system for their operation. A man may remain months with uninterrupted health in a fen-ny district imbued in miasms and thoroughly impregnated with them, until a debauch or some irregularity of conduct shall disturb the harmony of healthy movement among the
functions, and throw the vis vitæ off its guard, or impede its operations, and thus render the system an easy prey to disorder, when the disease will be immediately called up by the exciting causes, waiting an opportunity to act.

By exciting cause, is meant that agent which calls into action, or gives rise to "that particular assemblage of symptoms," primarily characterising the disease; for Dr. Good observes, "the cause introduces a tendency to a recurrence of the paroxysms from the first;" and Professor J. M. Smith* also observes, that "the nature and character of diseases are, for the most part, determined by the remote causes which produce them." Consequently, intermittent and remittent fevers must arise from different causes; for Dr. Parr observes, "if a specific difference can be established in any branch of natural history, it must be in the separation of remittents from intermittents. Dr. Good also says, "if intermittents ought to be separated, (as unquestionably they ought) from continued fevers, so ought remittents to be separated from intermittents." Now if the causes of fevers tend, as Drs. Good and Smith observe, to produce a peculiar movement, and if that constituting intermittent and remittent fever, be "specifically different, as Drs. Good and Parr both contend, then the position that they arise from different causes is established.

This, however, is far from being the fashionable doctrine of the present day, for Dr. Armstrong, a popular writer and sound practitioner, insists that intermittents, remittents, and typhus fevers arise from the same cause, differing only in grade of intensity; consequently, that human and marsh ef-fluvia are identical.

By the expression, "different grades of intensity," or "concentration," a very vague idea is conveyed. If by these terms is meant something analagous to the different grades of acidification, as for instance, the union of oxygen with nitrogen, it must be remembered, that elementary substances, according to the established Daltonian theory, che-

* Philosophy of Epidemics, part I.
mically only in certain definite ratios; and that every combination forms a new, distinct, and often totally dissimilar substance, capable of producing even opposite effects on the living fibre, which upset, at once, the theory of the identity of causes.

By "different grades of concentration," there must be understood something else, and the term can only be used to signify more or less dilution of the cause with atmospheric air, as an acid is more or less diluted with water. It follows as a consequence, on this principle, that those who contract fever nearest the source of the cause or focus, should have one form, and that every other, from the centre to the circumference, should have another character of disease, a circumstance never yet recorded.

During the encampment of the militia at Haerlem heights, in the year 1814, two young men sickened of typhus fever, and were conveyed fifty miles into my district. No fever was then prevailing in the country, yet three of one family, and six of the other, and several friends who visited them only occasionally, contracted the same disease. Being indigent, their confined effluvia no doubt generated the fever in all, yet none, even the clean and healthy visitors, had intermittent fever. Besides, how often has typhus fever prevailed extensively in the New-England States and in Europe, and no intermittent has, at the same time, ever been noticed. Now during the prevalence of these epidemics the causes must have been extensively diffused and variously diluted, and people of good and bad habits must have been exposed to their action: fevers of all types and characters must have occurred promiscuously, which no one is prepared to assert. Different grades of the same epidemic have been noticed and acknowledged by all writers and practitioners, yet every case bore the stamp of one character, which was always impressed, not only on the epidemic, but even on other diseases tending to convert them also to its own peculiarities. It is now confessed that remedial and all other agents tend to produce a peculiar or specific effect, both local and general, and this they do whether introduced into the stomach or general circulation.
The exciting causes of fevers tend not only to shape them after their own manner, but to produce an identity of local effect; witness erysipelas fever, scarlatina, cynanche maligna, &c. &c. It is in the open country that epidemics show their real character. In cities, a great variety of malaria are frequently present, and each tending to produce its own movement, a complicated and frequently undefinable train of symptoms is the result, denominated by my friend Professor Smith, idio-koino-miasmatic. A fever may be intermittent at the invasion, and by improper management the solids may become exhausted and the fluids become filled with excreta, or the product of human effluvia absorbed from a filthy external or internal surface, or confined atmosphere. The intermittent character is thereby overruled by these accessory agents, and the all-devouring typhus is the result. The tendency of all fevers is to exhaust the solids and fill the fluids with appurtenances of animal matter; so they all tend, unless arrested by nature or by art, to assume finally a sameness of character, usually denominated typhoid. Hence, by an accession of effective causes an intermittent may be compelled to remit, or to become continued. This, however, falls far short of proving the identity of all the primary causes of fevers. No man can deny that a fever, especially a protracted one, is a series of effects from adventitious agents or conditions no ways allied to the original cause, and differing, consequently, not in grade, not in concentration, but in essence.

Pathology.—Intermittent fever has so long been considered as depending on debility, that even at the present day this is the general opinion of the American and English physicians; and it has arisen principally from a mistaken notion of the modus operandi of the remedial agents. The very reverse of this, however, it has already been observed, has been advanced and supported by M. Broussais, the celebrated French reformer. He maintains, and not without some show of plausibility, that there is such an occurrence as an intermittent inflammation. The theory is rapidly advancing, and gastro-
enterprise has become a common phrase. The doctrine of M. Broussais is based on the following circumstances:

1st. Pain in the region of the stomach; 2d. Post mortem appearances; 3d. The means of cure. On each of these, I shall make a few remarks.

1st. Pain in the region of the stomach.—To prove that this sensation is oftener the effect than the cause of the disturbance of the system, it is sufficient only to advert to the physiology of M. Broussais himself. In his section on the passions he mentions, "pain and a sense of constriction" at the pit of the stomach, as the effect of all. Speaking of anger, he observes, "the idea which produces it succeeds only by exciting an acute pain in the epigastric region." During a fit of anger the blood is precipitated, with violence, to the encephalon and other viscera," and gastritis is the consequence, which by re-acting on the brain, produces the most violent movements. Thus gastritis is always necessary, according to this author, to finish a fit of anger. Even pleasureable sensations are, according to him, distinctly felt at the "epigastric region."

Dr. Johnson observes, "I repeat it then, that tenderness in the epigastrio is an exceedingly fallacious sign, and no criterion at all of organic disease in the parts underneath;" and he concludes, of a whole regiment every man would "wince" on examination.

The stomach has been called the centre of sympathies; the mucous membrane of the stomach, says Dr. Armstrong, is the most sensible tissue of the whole body. It is called, "the internal sense," the "primum mobile," &c. From these circumstances it must be expected that pain, constriction, anxiety, &c. will be felt at the pit of the stomach, from every considerable commotion of the system, whether corporeal or mental, which cannot therefore be considered alone as diagnostic of any specific pathological condition. These sensations, though primarily nervous, do frequently, if long continued, involve the whole structure and become a real inflammation, modifying and sometimes completely changing the character of the whole disease. Pain in the region of the
stomach, then, when present, can be viewed abstractedly in no other light than an effect of uncertain causes, frequently acting through the medium of the whole nervous or vascular system, and manifested in the "centre of sympathies," which suffers in a ratio proportionate to its sensibility, and the important part it plays in the animal economy. This condition, although an effect, may and frequently does become the leading feature, the most prominent link in the chain of causes and effects constituting an established fever; being, however, no more the primary cause than a host of other local affections, frequently developed in the course of a fever, which become, in their turn, leading causes.

2nd. Post mortem appearances.—A part so important, so sensible, suffering from every passion, every emotion, and withal so vascular and delicate in structure, must suffer materially and manifestly from every cause capable of producing death. Thus the French found marks of gastritis in healthy dogs recently hanged, and they concluded that these animals must have laboured under chronic gastritis, which by the by, M. Broussais says does not prevent people from becoming "extraordinarily fat."

Drs. Bretonneau, Troussiau, and Rigot, have often observed a redness and softening in the substance of the stomachs of dogs and horses killed in perfect health, and they have satisfactorily proved, in their opinion, that the redness observed in the mucous membrane of the stomach and intestines, by the disciples of M. Broussais, and held up by them as an evidence of previous inflammation, was produced by the stasis, or settling of blood during death. No evidence, therefore, of the gastro-enteritic origin of fevers can be based on post mortem appearances.

3d. The means of cure.—No one will deny that intermittents will frequently terminate favourably under the medecine expectante, or treatment of leeching the belly, abstinence, dilution, &c.; nor will any one deny that they will often thus terminate without any medication at all, so much so, that computations have been made and results obtained, of the number of paroxysms naturally constituting a course of inter-
If a spare diet and rest be adopted, the disease will frequently terminate spontaneously; many times, however, it will not, but continue purely from habit, one, two, or more years, even up to thirty-eight. It is said, these protracted cases are kept up by inflammation or scirrhus of some viscus: but I have several times arrested cases of two years' continuance by three or four grains of arsenic, given twenty-four hours previous to the expected paroxysm, without the least immediate or remote inconvenience. This fact argues strongly that the disease is not dependent on any local condition.

M. Broussais condemns, in the most unqualified terms, the use of bark in intermittent fever, as he is bound necessarily to do by his theory; but unfortunately for his system, those patients who have them soonest properly arrested by bark or similar means, suffer least from chronic derangements of the viscera.

It is contended that bark does not cure intermittents, but only prevents a recurrence of the paroxysms, and this is generally, though not necessarily, true; for necessity has several times compelled me to give arsenic through a paroxysm, yet a cure was nevertheless accomplished. This is by no means a good practice, yet it shows what may be done; but it is what could not be effected, were the gastro-enteritic doctrine of this disease true.

Besides; any of the violent passions are sufficient to arrest an intermittent, when, according to the physiological doctrine of M. Broussais, they all invariably and necessarily produce this identical gastro-enteritis, and ought, therefore, instead of curing, to develop the disease.

Having now considered in what the disease does not consist, I shall proceed to hazard an attempt to show in what it does consist.

Dr. Barres, or his reviewer Dr. Johnson, says, "intermittent fevers themselves, in their simple forms, have nothing inflammatory at bottom;" and Dr. Dufau has concluded "that intermittent fevers are probably febrile irritations." These two opinions I shall set up as land-marks, and endeavour to...
substantiate, with some modification, their correctness in a leading point of view.

Systematic writers, I am persuaded, never suffered intermittent fever in propria persona, or they would have begun their description several days prior to a regular and complete paroxysm. The disease never invades a person in this manner, as it does in some cases of relapse; but for several days previous, the subject feels a degree of lassitude, wandering pain, head-ache, &c. which recur at irregular periods, leaving intervals of partial relief. Meanwhile, a little chilliness is perceived, the pains and uncomfortable feelings are aggravated, and again more clearly abate. In this manner the disease continues to baffle an indefinite length of time, when on a sudden a complete paroxysm is evolved. During this forming stage the morbid process is mainly confined to the nervous system; the tongue is not coated, the appetite is unimpaired, nor are the functions in any great degree deranged; but when the disease becomes established, the appetite fails, the tongue becomes loaded, and for many subsequent days the functions are imperfectly performed even during the intermissions, and an evident inflammatory diathesis is developed in the system. As the disease advances, this inflammatory diathesis is worn off by abstinence, by exhaustion, dilution, or quietude; the appetite returns immediately after each paroxysm, digestion is restored, the strength is gradually increased, the intermissions are protracted, the paroxysms decline, and finally recur no more. This is the regular course of an intermittent fever in a good constitution, uninfluenced by local circumstances, and may be considered its natural tendency. I shall, therefore, divide the whole course into three periods, having three correspondent states, differing essentially from each other: they may be denominated its formation, its inflammatory, and its independent states. In order to establish a rational practice, I shall consider each period separately, from which some important therapeutical precepts may be obtained.

1st Formative period.—The cause of intermittent fever is confessedly an invisible substance, the product of the play
of chemical affinities among the materials of marshes, soils, &c. and all agents acting primarily on the nervous system; it follows of course, that the first evidences of disorder are manifestations of this tissue, acting under the combined influence of the morbific agent, and the inherent tendency of the living power to maintain its own movement. This complicated and confused correspondence of the nervous system continues longer or shorter, according to the feebleness or intensity of the morbific agent and the condition of the living fibre. Intermittents and mild remittents are several days forming, while the causes of some malignant fevers subdue the powers of life at once. The forming stage being an agitation of the nervous system, and consisting of a perverted or "altered action," it may be called, according to Sir Astley Cooper, a real irritation; and during this period it may be said to belong to M. Seguin's and Dr. Jackson's division of nervous irritation.

As a consequence of this condition, secretion, calorification, and all the functions depending on nervous influence, finally become affected, excitability is diminished, and the force of the circulation being thereby reduced, the blood gradually ceases to flow in the extreme vessels, they collapse, and the cold stage is the result. The fluids collect about the centre of the circulation, the heart and large blood-vessels become engorged, and from the unusual quantity of stimulus applied to them, they are at length aroused and soon act violently, and the hot stage is developed, which at length terminates in a profuse sweat; this for a time relieves the internal parts, the general commotion subsides, and henceforth the disease assumes its real character.

2d. Inflammatory period.—Independent of the natural tendency of irritation to produce inflammation, the violent action set up throughout the system must conduce to the same end. Besides, the complex structure of the liver, the delicate and highly vascular nature of the mucous membrane of the alimentary canal and of the nervous system, cannot be so violently assailed with impunity, and an acute inflammation is kindled up in these parts, during the hot stage, which is par-
tially relieved by the sweating process which ensues. I say partially, because the subjects of this disease invariably exhibit, at this period, a white scurf on the tongue more or less yellowish, a bitter or nauseous taste in the mouth, diminution of appetite, some thirst, a heavy unpleasant feeling in the head, weariness and a general disinclination to exercise both in body and in mind. This group of symptoms commences with the first regular paroxysm, and continues from ten to fourteen or twenty-one days. If the course pointed out by instinct, quietude, &c. with the use of laxatives be pursued, the inflammatory condition will not unfrequently soon subside, and all the morbid phenomena consequent thereon will disappear, and nothing but pure debility will remain during the apyrexia.

3d Period.—The tongue now becomes clean, the appetite good, the skin very perspirable, and no symptom of either local or general inflammatory diathesis remains. The disease now becomes fundamentally an uncombined and independent nervous irritation, and may continue months, and even years, although the subject of it be removed out of the reach of the causes from which it first originated. Furthermore, it may be arrested and health may seemingly be well established, and yet, like epilepsy, chorea, hysteria, &c. it will recur from any considerable interruption of health, and that too with all its train of identical phenomena, which cannot be referred to any other principle than that of an impression created and retained in the nervous system.

Would time permit, it would be an easy matter to prove that when, from any cause whatever, prostration of strength is suddenly induced, or the regular performance and harmony of the functions interrupted, the nervous system is prone to act in a desultory manner, giving rise to a variety of complicated and mysterious movements. During this state, all habitual actions and associations are more readily developed than those to which the nervous system is unaccustomed; hence the morbid process constituting intermittent fever having been once established, is again more readily called up. I have known it re-induced by a fright and by a fall from a horse. In these instances it came on instantly, and pursued
an uninterrupted course with its usual type. Besides, it has been known to be a local disease, affecting one arm only; and I once attended in a case in which it was confined to the nervous system, producing an undescribed and undefinable state, in which violent jactitation, screaming, gnashing of teeth, and a host of similar movements were manifested; the mind remaining all the while unaffected. From all these considerations taken collectively, I am induced to adopt the opinion of Dr. Parr, that intermittent fever when once formed, is a creature of habit, seated of course in the nervous system, independent of any inflammation, and consequently it must be "an intermittent nervous irritation."

On the duration of Intermittents, and their complications and conversion into Remittent and Typhus Fever.—After a laborious research, Dr. Bailly, a celebrated French physician, has arrived at the conclusion that the mean duration of intermittent is fourteen days. A little consideration will be sufficient to convince any one of the uncertainty of any such conclusions. Conceding that intermittents are never continued by habit, but terminate with the reduction of the susceptibility to the impression of the remote cause, or of the inflammatory diathesis, the difficulty is still far from being removed. The susceptibility to the impression of all agents is well known to vary greatly in almost every individual; and the same may be said of inflammation, whose duration, no less than intensity, depends on the condition of the subject affected, plethora, rigidity of fibre, diet, temperament, &c. These and numberless other accidental circumstances of the individual are acknowledged to influence its continuance, and consequently the length of the fever.

Intermittent fever is liable to be complicated with a variety of local affections, either accidental or of its own development; among the latter may be mentioned, congestion or torpor of the liver, spleen, pancreas, &c. These are sufficient to keep up the disease any length of time. The accidental circumstances with which it is liable to be complicated,
are the endless variety of incidents attendant on humanity, all the phlegmasiae, wounds, contusions, wrenches, dislocations, fractures, scirrhii, uterine affections, the accidents of child bed, &c. These operate by impeding the regular performance of the functions necessary to constitute a healthy action capable of withstanding the tendency to perverted movements; therefore, the morbid associations continue until these impediments are either removed or mitigated.

Intermittent fever may be converted into a remittent, and be made to terminate in a typhus state by different means, which may be adventitious or concomitant.

1st. Adventitious agents.—Large quantities of stimuli, administered to shorten the cold stage or force out a sweat, induce such a violent action of the vascular system as is incompatible with the sweating process, and relief from that source cannot be obtained, and the consequence is, that instead of a complete intermission, a remission from exhaustion only is realized. If the stimuli be now continued, especially if the bark or its quinine be added with animal food, they remain still less perfect and the exacerbations more severe. This state is undeniably the effect of the primary causes and adventitious agents, and assumes the name of remittent fever.

By a retrograde course of management a perfect intermittent may be readily obtained. But let the same course of procedure be pursued, and in addition, let the intestinal canal become loaded with putrid colluvies and the skin with filth, exhaustion of the solids by excessive action, and vitiation of the fluids by absorption next ensues, and the consequence is debility, a brown or black furred tongue, and all the symptoms of typhus fever. The laws of excitability governing the respondence of action are now changed, the solids, fluids, and living principle being thus affected, total disorder prevails, in which the primary agents can have little or no participation. No retrograde course of management can now revert the scene, the misguided steps cannot be retraced, but health must be restored by a circuitous and indirect route.
2d. Concomitant means.—These are, 1st. A vitiated condition of the fluids consequent on a filthy habit of life, and a diet of putrefying materials, common to the poor of large cities. The primary causes of intermittent fever and these concomitant agents acting together on the living principle, each part of the body being dissimilar, tending constantly to produce its own peculiar movement, confusion and derangement of action obtain, and a remittent or typhus fever is the result, being the combined effects of the whole group of causes by which those essential to the formation of intermittent fever are overruled.

2d. Debility; a due degree of energy is necessary to sustain the system under the evolution of the different stages of intermittent fever, therefore debility alone may prevent its accomplishment, and a remittent and typhus may result from this failure.

3d. The different phlegmasiae may exist cotemporaneously with the development of intermittent fever. These by maintaining an inflammatory action, prevent the apyrexia, and a remittent is the consequence, which by exhaustion and corruption may degenerate into typhus.

4th. Rigidity of fibre, as it is called, or an inflammatory disposition of the whole system, may produce the same effect by a similar course of influence.—Hence it may be rationally inferred, that when remittent or typhus fever supervenes on intermittent, they are the effects of accidental causes, many of which are unavoidable, whilst others may be easily evaded by good management.

Notwithstanding remittent and typhus fevers are thus frequently induced, they often arise singly and epidemically from causes, the tendency of whose primary operation is the exclusive evolution of these fevers. I have known remittents to prevail, many of which were of a grade as mild and more tractable than any intermittent, and of shorter duration.

Prevention.—To the physician this is the least important part of the subject, except as it regards his own preservation;
but to the community it is of the utmost consequence. The truth of this, however, is seldom duly appreciated by the populace; the rigid precepts of hygiene run too opposite to their natural propensities to be relished by them, and they pass heedlessly on until their attention is arrested by the rigors of the fenny enemy. In vain physicians inculcate the necessity of regular habits, temperance, &c.: their words pass idly by, and no measure is adopted, except the pernicious anti-fogmatic dram.

The theory of prevention may be rationally inferred from the etiology of the disease; and if it be found conformable to experience, it will have a double claim to notice.

The great exciting cause, or that which gives it origin, essence, and character, is confessedly an agent, which tends constantly to diminish the susceptibility to its own impression; consequently by constant application, the system becomes insensible to its action, or acclimated, as it is termed, but more properly habituated; therefore, by evading those causes which give it activity, its presence may be finally unfelt. Unfortunately, however, for those who live in fenny districts, the return of winter, in some measure, breaks up this habit, and renders them again liable to be affected.

Towards the removal of the source of the miasm, physicians can do but little. This can be effected only by draining and drying swamps and all marshy places, or by keeping them constantly covered with water during the hot months. But where these measures cannot be adopted, our only hope of escape must be placed on avoiding the predisposing causes, or those which prepare the system for the evolution of the disease. These, it has been observed, comprise every thing that has a tendency to interrupt the regular, or induce a feeble performance of all or any of the functions necessary to health; thereby giving the exciting causes an opportunity of calling up the disease. The accomplishment of this object includes the whole system of hygiene, requiring volumes for its discussion. Some of its most important points, however,
may be obtained by classing and briefly noticing the predisposing causes. They may be divided into three classes:—

1st. Those which clog or suffocate action by their excess. This class comprises plethora and accumulation in the primateæ, either of filth or an undue quantity of food, which soon becomes such by fermentation.

2d. Those which exhaust by their stimulation, or derange by their quality. This class comprises every cause, both physical and moral, capable of producing excessive action, and still short of the suffocating grade.

3d. This class comprises every cause tending directly to enervate the system, as cold, the depressing passions, deperation by evacuations of any kind, &c. for as Dr. Burney justly observes, "the less energy a person has, and the weaker the natural action is, the easier it is changed or destroyed."

By avoiding these causes—by adopting regular habits—by living soberly, righteously, and temperately, neither suffering excessive stimulation nor deprivation—by maintaining equanimity, with a confidence of mind that knows no fear—we may secure a comfortable share of health amidst pestilential vapours, disease, and death.

Treatment.—Since the introduction of quinine, the treatment of intermittent fever has become almost purely empirical; the consequence is, that the medicine, so important in itself, has depreciated considerably in the public estimation. Nor is this at all surprising, since it is resorted to, not only by the people, but by the faculty at all periods of the disease, and under all circumstances. Containing the active principle of the bark in a concentrated form, it is liable to aggravate and confirm all inflammatory affections. In fact, quinine, arsenic, and all other articles of the same class, are frequently entitled to the just reprehensions so freely bestowed on them by the disciples of Broussais. I shall make an attempt to establish the treatment of simple intermittent fever, in accordance with the views I have taken of the three distinct periods already noticed.

Palliative treatment.—So little is requisite to be done du-
Fountain's Observations on Intermittent Fever.

ring the paroxysm, that I shall pass over this part of the subject with a very few observations.

Quinine has been recently recommended in the cold stage by one physician, and venesection by another. Dr. Mackintosh's plan of bleeding in this stage has gone the rounds of all the medical journals. It is not a little surprising that this practice should be vaunted as something new, when it has long ago been practised, and has been more clearly detailed by Dr. Potter in his notes to Dr. Gregory's Practice of Physic, than it has since been by Dr. Mackintosh himself. In plethoric habits it may be useful by unloading the central vessels, but it ought certainly, as Dr. Potter observes, "to be directed by a discriminating eye." In the hot stage of intermittents, in full habits, it is often highly necessary to reduce the violence of action, and thereby to favour the sweating process. With this, opium is the only remedial agent ever required; appropriately administered, either in the cold, hot, or imperfectly developed sweating stage, its effects will be highly gratifying. The dose should be very large, and administered all at once. During the cold stage its effects will be greatly enhanced by combining it with some warm vegetable infusion, and during the hot stage with large draughts of cold water. Thus administered, it almost immediately allays irritation, and produces an agreeable sweat.

Curative.—In the 19th number of this Journal I advocated strongly, the use of arsenic in this disease. The horror associated with the very name of this article, must ever militate against its general adoption, and prevent an experimental investigation of its virtues. Far better might it be totally laid aside for the destruction of rats, than to be approached with a faithless head and trembling hand. Suspicious of every symptom which arises during its use, the timorous practitioner apprehends and conjures up more dreadful consequences than ever arose from the contents of Pandora's box. But as far as I can judge, its most clamorous assailants are those who are most ignorant of its use. Since quinine has become so attainable, arsenic may, in general, be dispensed with in the treatment of intermittent fever.
In justice to the character of the paper alluded to, I must beg to offer, before dismissing the medicine, a few remarks relative to its imaginary and real effects.

Nothing is more common in medical experience, than for recoveries to occur during the use of an article which has no agency in the event. So nothing is more frequent among the profession than to impute a bad result to the medicine at the time in employ, although it have no agency in the occurrence. We see effects, but infer causes most suitable to our tenets.

Imaginary effects.—Eli Ganong of Putnam county, had a mild remittent fever, for the relief of which he took only a few laxatives, spts. nit. dil. and some simples of his own device. On the sixth day he found he could not move his hands or feet, and on examination they were found paralyzed. The paralysis gradually progressed up his legs and arms, and on the fourteenth day it reached the muscles of respiration, and death ensued from their insubordination to the will. Sensibility and his mental faculties were unaffected. For a satisfactory solution of this singular occurrence, a particle of arsenic would have been sufficient.

The wife of a neighbouring clergyman had a remittent fever, which soon became intermittent; she took no other medicine than emetics and full doses of calomel. During the hot stage of a paroxysm I let sixteen ounces of blood. After standing an hour, it manifested no appearance of coagulation, but remained a fluid, dark, muddy mass. The next morning I found her sunk, with clay-cold extremities and covered over with petechiae, vibices, and large purple patches, induced by the oozing of the blood into the substance of the skin, or under the cuticle which was occasionally elevated by the dark purple fluid. On gazing on this appalling spectacle, it struck me forcibly how readily a little arsenic would explain the mysterious phenomenon. I might adduce numberless similar instances of these nulli fecilii, of almost every week's occurrence, to which arsenic would be a most convenient father. Hydrocephalus, dropsy, rheumatism, aphthæ, inflammations of the mucous membranes, liver, spleen, kidneys, bladder, &c. are frequently the effects of intermittent
fever, and yet every instance of the kind occurring under the use of arsenic, would be attributed to this article. We ought, therefore, to be cautious in deciding on the effects of a remedial agent, and make up our judgment, not from one, nor several, but from many cases.

Real effects.—It is said in Dr. Gregory's Practice of Physic, that "in moderate inflammatory cases and during the fit, it may be given when the bark cannot, without regard to cough, pain, or other local affections." I have administered it often in considerable pulmonary inflammations, without any other than a temporary aggravation. Ample experience has qualified me to confirm the statement, that inflammations of the viscera are less injured permanently by arsenic than by bark. Dr. Good says, "it is a medicine of real and inappreciable value in many diseases, and none more so than in intermittent fevers."

When quinine is unattainable, in the case of infants, and in protracted cases in which quinine has lost its effect by repetition, arsenic is often indispensable. I have twice cured quartan agues of two years' continuance by giving three grains the day preceding the expected paroxysm. These considerations being suggested, arsenic may claim an honourable discharge from a service in which it is capable of acting so conspicuous a part. Its use is contra-indicated by inflammation of the mucous membrane of the alimentary canal, evinced by soreness or pressure; and by a predisposition to hydrocephalus.

Curative treatment.—First period. Dr. Burns certainly fell into a great error when he concluded, "that although we may remove one action by inducing another, yet this cannot be done until the first has gone through all the essential stages to become perfect," for every practitioner knows, that in the formation of many diseases, there is a period in which it may be arrested, by instituting suddenly, a more vigorous action than that which constitutes the morbid process. This is most forcibly exemplified in the treatment of mild remittent fevers. To arrest them, I have frequently administered an emetic, followed by eighty drops of arsenical solution, in
twenty-four hours. The consequence was, that if thus treated within two or three days after the commencement of the premonitory symptoms, an immediate stop was put to the progress of the disease. A considerable vascular action was generally induced, but after the operation of the cathartic, which always concluded the course, the commotion subsided, and the disease vanished. This opportune period once lost, neither arsenic nor quinine were found admissible, frequently for weeks.

A very fatal fever prevailed in Bedford, in the vicinity of the Hon. John Jay, Esq., one of our ancient worthies. It was denominated typhus, a very convenient subterfuge for indolent practitioners; but its real character was that of a remittent fever, with a low contemporary inflammation of the mucous membrane of the intestines, lingering several weeks and terminating by diarrhoea, aphthæ, and death. Dr. Mead, who resides in that vicinity, found that eight or ten grs. of quinine given the first few days, accompanied by fomentations of the abdomen, arrested the disease at once: whereas the same course had been tried in the progress of the fever, and without any good effect, for its march to death, though slow, was uninterrupted. This preliminary digression being premised, I will now return to the consideration of intermittent fever.

Having already detailed some of the premonitory symptoms of this disease, it may be observed, that their continuity varies in different individuals, always preceding the establishment of the fever a sufficient length of time, however, for all remedial purposes. In general, after the second full-formed paroxysm the inflammatory diathesis is fully developed, and the formative period terminated. Previous to this the indication of cure is, to break up the morbid concatenation by full vomiting, followed by ten or fifteen grs. of quinine in the course of the twelve succeeding hours. These measures being adopted, both inflammation and habit are prevented; and if a cathartic be administered, and quietude, light diet, regular habits, &c. be enjoined, no relapse will ensue.

2nd Period. It is at this stage of the disease that so much injury is frequently done by the injudicious use of tonics, in-
cluding the whole class from \textit{alpha} to \textit{omega}. Hence the old custom of waiting the occurrence of a certain number of paroxysms, before the administration of bark was not so gross an error; hence, also, the reason why in certain sections of the country such prejudices prevail against all attempts to stop their progress. They may, however, be arrested at any time with safety, during this period, provided the patient submit to a consequent course of antiphlogistic treatment, and such other measures as circumstances may require. But such is the effect of general theory, both popular and medical, that patients discontinue all means, vainly imagining themselves cured; or what is still worse, they adopt the very reverse of propriety, that of tonics to prevent a relapse, which is the most effectual means to counteract their design.

During the inflammatory period, that is as long as any symptoms of local or general sthenia remain, indicated by a coated tongue, &c. without any regard to length of time, the physician has the choice of two courses, which is frequently a perplexing trial. He can arrest the paroxysms at once, and remove the inflammatory diathesis afterwards; or he may first subdue this diathesis, and subsequently interrupt the paroxysms. From a long and careful observation of the effects of the two courses of procedure, I am well convinced of the superiority of the latter in general. Each however claims notice; and first: Many circumstances render it necessary to put an immediate stop to the paroxysms. It is well known that people in advanced life do sometimes die from the violence of the cold, or from apoplexy during the hot stage; whenever, therefore, such an event is apprehended, quinine should be instantly resorted to. From ten to fifteen grains may be divided into three parts, and the whole may be administered in the course of the six hours preceding the expected paroxysm.

Infants and some adults are peculiarly liable to spasms during the cold stage, and epilepsy attends every paroxysm, from which death sometimes results; and whether this event is expected or not, the recurrence of epilepsy tends to create a habit or induce some structural derangement, by which they
will be perpetuated; hence a period should be put to the agues at once by quinine in large doses.

Females who have contracted a habit of abortion, persons with recent fracture, those who suffer extremely from the repetition of ague fits, and all whose business render it necessary, or whose wishes demand it, may have them arrested at once by quinine or arsenic. But those who have them thus broken up should remember that they are not cured, and that the utmost care on their part, and circumspection on the physician's, are necessary, or relapse is certain. Instead of tonics, opening medicines, as calomel followed by cathartics, light diet, and absolute rest, must be strictly enjoined. By these and such other means as circumstances may indicate, a permanent cure may be easily and comfortably obtained.

2d. We frequently meet with subjects of this disease, in whom rigidity of fibre, plethora, or a local or general shtenetic diathesis is evident; in such cases, and in all others in whom such a disposition is suspected, I am convinced of the inexpediency of administering quinine or arsenic, until these obstacles are removed. I have often heard patients, after having had several relapses, say they did not feel right, or as they used to do, until after they were cured the last time.

It is unnecessary to enter into a detail of the means of removing inflammation, congestion, &c. Bleeding, calomel, purging, or blistering, low diet, &c. will readily suggest themselves to the practitioner. These preparatory measures, as they are usually though rather improperly called, should be persisted in, until the end for which they were designed is fully obtained, that is, if we wish to make cures and avoid after-consequences. It was the injudicious use of tonics at this period, that led M. Broussais to condemn their employment in such severe and unqualified terms of reprobation; and it was the same cause which engendered the popular prejudice against all plans of cure by medicine, and created the opinion that ague and fever is a wholesome disease. Under this head, I shall mention a singular but quite successful method of treatment which obtains in some country places. It consists in giving up all business, and living solely on a diet of skimmed milk and
roasted apples. The water practice is of the same cast, by which patients are directed to be kept exclusively on water three or four days, no food whatever being admitted. The inflammatory conditions, congestions, &c. being removed, it brings me to the

3d Period. It is this period that affords the most pleasure to the physician, and satisfaction to the patient. In fact, after a proper course of deobstruents and cooling treatment, one half of the ordinary intermittents will terminate spontaneously, or by the most simple means; hence the origin of another country practice, for which some have obtained the appellation of fever and ague doctors. They inquire into the number of fits a person has had, and then cutting as many niches into a stick as will make the number nine or twelve, they deliver it to the patient, who puts it into his pocket, and when the number of fits corresponding to the marks has endured, his faith often cures him.

The indication of cure, at this period, is also twofold: 1st. To make an impression on the system more powerful than that which constitutes the disease; and 2d. To restore vigour, and thereby to enable the natural to supplant the morbid action. Here again the practitioner has an opportunity of choosing his course of proceeding, for either will cure the disease. The former leaves the most favourable impression on the patient's mind, but I am strongly inclined to believe the latter leaves quite as beneficial a one on the system.

The first is that of true counter-irritation, or of overcoming one action by inducing another. In the present instance it is to be accomplished by making a sudden impression on the system by quinine, given in such a manner as to have the full influence of the medicine at the time the chill is forming. It has been recently ascertained, that a quantity of quinine sufficient to arrest the disease, may be administered during the cold stage, and the object be still accomplished. This mode of exhibiting the medicine certainly possesses no superiority whatever, and it must evidently be more comfortable to take it a few hours sooner than to wait for the disquietude, pain, and confusion of an ague. It is of material con-
sequence that the quinine should be given wholly within a few hours of the recurrence of the paroxysm, otherwise the impression will subside before the morbid action commences, and a failure will be the consequence. In such a case the quantity of quinine must be increased; for the susceptibility to the impression of the agent will diminish with its use, and it will finally fail totally to arrest the disease, although triple the quantity at first sufficient, be administered. This feeble practice has brought many valuable medicines into disrepute, which is especially true of arsenic. To begin with three or four drops, as directed by Dr. Armstrong, who lets blood by the gallon, and increase the dose until a cure is effected, is the most effective method to obtain all its injurious, and lose all its beneficial effects. Whoever has temerity enough to use this article, will find that 80 or 100 drops of the solution, given in divided doses during the twenty-four hours previous to the paroxysms, will invariably arrest the disease, and a cathartic exhibited within twelve hours of the last dose, will as invariably prevent any bad consequences.

Not willing to rest the assertion that large doses of arsenic are preferable in intermittent fever to small ones, on my own experience, I must beg to adduce the authority of Dr. Mitchell of Philadelphia. He says, "Dr. Eberle never observed any injurious effects to follow its exhibition. It appears therefore, from the statement of this physician, that where arsenic is indicated, it ought to be given in as large doses as the stomach will bear, it being much more promptly efficacious, and not more detrimental to the general habit, when thus administered, than when given in smaller doses."

The disease being thus arrested, some mild unirritating tonic, as the bitter vegetable infusions, may be administered, and absolute rest enjoined.

2d. By restoring tone.—The above method cannot be said to accomplish the end by advancing tonicifity. It is absurd in the extreme to pretend that quinine administered in the manner detailed, arrests the disease by virtue of its tonic power. The fact of its being successfully exhibited wholly in the cold stage, must render such an opinion ridiculous. When we
attempt a cure on the tonic plan, or that of bracing the living fibre, and thereby fortifying the natural actions, we should begin with quinine in small doses, combined with some tonic bitter in the form of tincture, or in a solution in water acidulated with a little sulphuric acid.

As a general tonic, however, the bark in substance is said to be superior to its quinine. An ounce suspended in a pint of wine with some aromatic, is a good tonic, given in doses of an ounce three times a day. In full habits in which there is a paucity of the red globules of the blood, iron, in the form of phosphate or prussiate, will contribute materially to a cure.

**Treatment of complicated Intermittents.**—Intermittent fever is liable to be complicated with such a variety of affections, either primarily or consecutively, that to enter into a detail of all would far exceed my limits. The most prominent of these may be noticed.

1st. **Hepatic derangements.**—These may be inferred from a yellow slimy furred tongue, a pale or yellow cast of countenance, with a tumid abdomen and irregular bowels. This condition may be relieved by small doses of calomel, followed by purges of neutral salts. This plan is to be pursued until the skin and tongue assume a more healthy aspect, and the abdomen become soft, when the quinine or bark will complete the cure.

2d. **Dropsy.**—This being in general the effect of visceral obstructions, these must be removed before a cure can be effected. Small doses of calomel, succeeded by copious purging, will be found useful.

3d. The most obstinate and fatal of all combinations are those organic affections of the uterine system and the accidents of child-bed, suppression of the lochia from cold, retention of pieces of placenta, &c. These require great skill and experience on the part of the practitioner.

4th. **General laxity of fibre.**—These require ammonia, capsicum, wine, iron, &c. to be combined with the bark or quinine as circumstances may indicate.

5th. **Excessive sweats.**—These have been generally viewed
as consequent on debility, and this is frequently true when they succeed the disease; but when they accompany it, they are more generally indicative of hepatic derangement, causing imperfect intermissions, in consequence of which the sweating stage is prolonged during the whole apyrexia. I have found small doses of tart. antimonii, given every hour in the afternoon, with six grains of calomel at bed-time and a dose of Epsom salts in the morning following, speedily to arrest the sweating, and subdue the fever connected with this condition.

Many other articles are reputed to be used successfully in the treatment of this disease, a few of which may demand notice.

1st. Prussiate of iron.—Dr. Zollikofler, a few years since, introduced this article into practice, and Dr. Hosack confirmed its character in a letter published in this Journal. Experience has proved it to be a very uncertain remedy in the generality of cases, and it is now nearly laid aside; probably, however, for the want of appropriate indications for its use.

2d. Piperine.—Extract of black pepper. This article has been highly extolled by many writers, but I suspect by few practitioners; for I have found it generally to fail, although it heats remarkably the stomach and fauces. It must be recollected, that the virtue of a medicine is not in a ratio to its sensible qualities. I am satisfied it is unworthy any confidence in this disease.

3d. Sulphur.—Dr. Chapman says, ʒlj. of sulphur in a gill of brandy, administered half an hour before an expected ague, effectually prevents its recurrence. This I have sometimes found true. Yet the same quantity of sulphur given in a glass of port wine is quite as effectual, and is a much more tolerable dose.

4th. Cobweb.—This is certainly deserving more respect than it has generally commanded, yet ridicule will always keep it in the back ground.

5th. Charcoal.—In cases accompanied with fetid breath, putrid or acid evacuations, costiveness, and symptoms of in-
testinal or gastric functional derangement, this is an invaluable article; being the most effectual means of counteracting this obstacle to recovery. A cure frequently follows its use.

ART. VII A Treatise on Semeiology, translated and abridged from the French of F. T. Double, M. D.; with Notes and Additions. By E. G. Ludlow, M. D.

Semeiology, or Semeiotica, is an ancient division of Pathology, for which, in modern nosological systems, the term Symptomatology is substituted. It is the science of symptoms and their value in diseases, embracing those which have occurred, which now exist, or which may be anticipated. In all the branches of science which are advanced by a close observation of nature, we are more indebted to ancient than modern research; less engaged in the formation of futile systems and hypotheses, or embarrassed by the accumulated contradictions of ages, the Hippocratic school patiently interrogated nature, which, unshackled, appeared to render a willing response. The present is pregnant with the future, and all diseases have a determined course, and a physiognomy which is apparent to the semeiologist, who discovers it amid every variety of modification. Among the older cultivators of this branch of medical science, are Hippocrates, Avicenna, Baglivi, Sydenham, and Hoffman; among those of a more recent date, Dr. Hall of Edinburgh is most conspicuous—his work on diagnosis being a complete manual of the art.

In 1811, Dr. Double, at present one of the most eminent physicians of Paris, published his 1st volume of Semeiology. Owing to an extensive practice, and the political state of France, the 2nd did not appear until 1817; the 3d and last is either recently published, or is now in the press.

From the extended view the author has taken of his subject, I shall necessarily be obliged to restrict myself to the practical part of his works, to which it is my intention to
make such notes and additions as my limited knowledge may furnish.

On the art of examining and interrogating Patients.—The exercise of this art, renders the physician completely master of all the important facts of the case, and disengages him from all superfluous detail. It is the base of all correct observation and good practice, and conducts us in the most prompt and sure manner, to the discovery of the true character of disease; the kind and degree of danger we have to fear; and the aggregate of hope we may entertain, and thus enables us to establish those indications of cure which naturally flow from such knowledge. To acquire this, erudition and long practice should be united to patient research and profound meditation; for it is necessary to have learnt much, before we know how to ask for that of which we are ignorant. In proportion, also, to the method pursued in examination, and the pains taken to investigate disease, will be the confidence of the patient in the physician; for the first feeling the sick exact, is an interest in their situation.

The art of examining and interrogating patients, divides itself, naturally, into two distinct parts:—the 1st should embrace the knowledge of those symptoms which have preceded the malady:—the 2nd comprehends those which essentially appertain to it. The practitioner should study the climate of the country which he inhabits, the quality of its waters, the prevalent winds, the changes of the seasons, the reigning epidemics, and the known successful treatment of the same.

Furnished with this preliminary knowledge, he arrives at the house of his patient, previous to seeing whom he should inform himself, through the parents or friends, 1st. of the age; 2nd. of sex; 3rd. profession; 4th. passions; 5th. habits and mode of life; 6th. condition of the functions in health; 7th. state of health previous to the invasion of disease; 8th. diseases of the parents and family; 9th. those by which he has been attacked from his birth; 10th. the general effect of medicines on the constitution, and the particular impression
on the patient, produced by blood-letting, emetics, cathartics, narcotics, &c. By this method the physician avoids fatiguing the patient by questions, and by his previous knowledge appears to anticipate a portion of his sufferings, and thus increases his confidence in him, which is equally as important in the cure of diseases, as the action of medicine. This is confirmed by the fact, that physicians are most successful with their intimates. "I have but little faith in the medicines of physicians, but much in that of friends," was a saying of Rousseau.

An unavoidable impression being always produced on the patient by the entrance of the practitioner, he should not immediately feel the pulse, but commence his inquiries by ascertaining the precise time of the invasion of the disease; this being indispensable to the calculation of crises and critical days; also, the condition of the patient immediately preceding the invasion, for often the character of the malady is in this way developed. Likewise, whether this is the first time the patient has been attacked with the present disease; and if not, what was its course in the preceding attack, the means employed and the manner of its termination; next, the nature of the symptoms each day since the invasion of the malady; their intensity; the kind and quantity of the evacuations which have taken place; the regimen; the medicines employed and their effects. He should also hear with calmness and without interruption the patient's history of his case, having the room sufficiently light to observe his features, his position in bed, his strength or debility, and the regularity or irregularity of his movements; which includes all signs furnished by the exterior of the body.

The attention of the physician should be now directed to the functions of the external senses, in reference to their actual state compared with their condition in health; next, the respiration, under which should be comprised all its modifications, as those of oppression, frequency, &c.; also, the different acts dependent on it, as gaping, sighing, hiccup, cough, and the alterations of the voice and speech. After respiration, the circulation may be considered as next in relative im-
portance. Too much stress is in general laid on the state of the radial arteries, because they are the most sensible; but the pulsation of arteries often vary from a variety of causes, not only on both sides of the body, but often at different points on one and the same side. Thus the beat of the two radial arteries often differ, owing to natural or accidental causes, as ossification, injury, &c. The carotid and temporal arteries often do not coincide with the radial. I therefore advise an examination of the circulation at different points of the system, and particularly the heart itself. I am much surprised that the centre of the circulation is neglected, while such importance is attached to its branches, for by the irregularity of its pulsations we frequently detect organic diseases.

The third division in my order of examination is digestion, including the acts of deglutition and nutrition as perfectly or imperfectly performed, and the assimilative function, as obesity or emaciation. The organs of generation in relation to their functions are next worthy of attention, as being frequently connected with many acute and chronic diseases. After the examination of the functions, the vital powers are to be considered, as sensibility, irritability, and the intellectual faculties, with reference to their diminution and augmentation, and those general and symptomatic affections which are their results. The nature and condition of the different secretions complete the examination of the patient.

I will suggest a precept which is too important to be omitted—that practitioners should visit their patients each day at a different hour; the phenomena of the disease are thus apparent to them, and they are enabled to correct errors in their practice, which are otherwise unavoidable.

To many the method I recommend may appear tedious, but the time we employ in interrogating nature, is never lost.

On the formation of Symptoms.—There exists between the external character of objects and their internal qualities, such a connexion, that we always judge of the nature of a body by its exterior—it is the same in medicine—there exists an analogous dependence between the symptoms and nature of
maladies, with this difference, that it is not a simple conformity, but the dependence of cause and effect. Thus symptoms, when properly investigated, never fail to acquaint us with the disease and the causes with which it is connected, the degree of hope and fear we may indulge, and the proper treatment we ought to pursue. The knowledge of symptoms is then what we first learn in the study of diseases, and by uniting one symptom with another, and comparing them together we soon form deductions, and from these consequences and conclusions. These conclusions relate, 1st. To the knowledge of the disease, or its nature—these are the diagnostic symptoms. 2d. To the knowledge of the probable events which ought to follow—these are the prognostic symptoms. To arrive at these different results, analysis is the only course to follow. It is necessary, at first, among the assemblage of symptoms that we have gathered, to separate those which are accidental from those which essentially appertain to the disease; and particularly those which depend on idiosyncrasy, or on some extraordinary or insulated circumstance: also, those general symptoms which occur in all diseases, and which, consequently, do not belong to any in particular. It becomes apparent, therefore, that it is indispensable to have a profound knowledge of the history of maladies, and that the study of nosology and pathology must precede all clinical practice; for we must learn diseases by their proper symptoms before we can predict their results. We should endeavour to discover, among the assemblage of symptoms, whether the disease is simple or complicated; and if the latter, the nature of the complication, and the degree of consideration it merits in the treatment. Complications sometimes exercise in disease a great influence, and it is always important to reduce a complicated disease to a simple one.

On Symptoms derived from the external appearance of the patient.—Among the symptoms which the different external parts of the body present, and the numerous modifications of which they are susceptible in diseases, there are some which relate to the external character of the body in general, and others to its different parts. The symptoms furnished by
these two sources are equally important, but I will confine myself, primarily, to the consideration of the former.

On Symptoms derived from the attitude of the Patient.—The first thing which strikes the physician when he sees his patient is, his attitude, whether lying or sitting up: in general the latter is a good sign, especially if in a natural manner, as it shows his muscular strength. But it is necessary to consider, what is the nature and character of the disease which obliges him to keep his bed in order to prognosticate the danger. Thus, for example, in convulsive asthma, in the advanced stage of hydrothorax and phthisis, the patient cannot lie down; he is always sitting on his bed or in a chair. I have always seen these patients die out of bed. Those patients who bend their bodies forcibly towards their thighs, forming a curve, indicate severe pain in the spine, diaphragm, or abdominal region. In all affections of the head, patients with difficulty keep an horizontal position, preferring to sit.*

In acute diseases in general, and particularly in peripneumony and pleurisy in their advanced stages, it is a bad sign when the patient wishes to walk or to sit up in his bed; effusion in the chest is to be feared, or it is an evidence of great debility of the respiratory muscles.

It argues a great prostration of strength and often approaching death, if the patient lies on his back, especially if his arms and legs are widely separated; the same if he lies across the bed, with his hands or feet hanging out of it: also, in acute diseases, when the patient sinks towards the foot of the bed, notwithstanding every exertion made to keep him up. There are however, these exceptions, that it occurs without being indicative of danger in infants, and in paralytic and rheumatic affections. When the patient lies on his belly, it indicates either the colic or approaching delirium. It is an erroneous idea, that patients with inflammation or congestion of the viscera, of the chest or abdomen, always lie either on the

* In symptomatic diseases of the head, the contrary disposition exists.
side affected or on the other, for both of these opinions have prevailed. Autopsic examinations have convinced me, that no importance is to be attached to this symptom, for many organic lesions allow of every diversity of position.* When serous, sanguineous, or purulent effusion has taken place, the patient lies on the side where the effusion is formed; and if it exists in both sides, the patient lies on his back, or sits up in bed if the effusion is considerable. When he often changes his position or is uneasy in bed, or sometimes lies down and then rises, or without cause wishes to get out of bed, it is indicative of extreme irritability, external or internal inflammation, or approaching eruption, as small-pox, critical hemorrhage, or death.

Symptoms derived from the external appearance of the body in general.—The external appearance of the body embraces, 1st. Its stature; 2d. Its size.

The stature.—The increase of the body, considered even in the regular course of nature, predisposes to many maladies; as fevers, diseases of the joints, enlargement of glands, nasal hemorrhage, and derangements of the organs of digestion, &c. A middling stature is the most conducive to health. Individuals who are very short in proportion to the strength of their constitutions, are subject to asthma and apoplexy. Those who are tall and thin, to general debility, and diseases of the organs of respiration. A rapid growth of the body is unfavourable, when it takes place during or after convalescence from an acute disease, or during the course of intermittent fevers or chronic affections.

Size of the body.—Under this head, I will treat of obesity and emaciation.

Obesity.—This state of the body may be regarded as a disease which singularly disposes to many affections, and

* It is almost invariably the case in pleuritis, that the patient lies on the side unaffected, and in diseases of the liver the reverse. In complicated or chronic affections, the attitude can never be diagnostic.
aggravates those which exist. Individuals who are very fat, are deprived wholly or in part of freedom of movement; their functions are preformed slowly and with difficulty; their lives appear to be incomplete—they grow old sooner than those who are thin, and are subject to apoplexy, vertigo, angina pectoris, hydrothorax, &c.

It is a bad symptom during many diseases, when the size remains the same as in health, and is not diminished in proportion to the weight and duration of the malady. In these cases, we have to fear either a fatal result or protracted recovery. It is a favourable sign, when maniacs and hypochondriacs become fat in proportion as their mental alienation diminishes; but if the disease remain the same, they may be considered incurable.

Emaciation of the body.—A spare habit, joined to good health, is without doubt the most favourable for the free exercise of the functions of the animal economy and the intellectual faculties; but where there is emaciation, especially if connected with indifferent health, the existence of disease in the digestive organ may be suspected. Emaciation may, however, be the natural effects of acute pain, prolonged watching, excessive labour, great abstinence, the abuse of spirituous liquors, and protracted disease. An attack of serious disease may be apprehended, when emaciation supervenes without sufficient cause or a known reason. In pregnant women, extreme and rapid emaciation without apparent cause, is indicative of tedious labour or abortion. In the commencement of all acute diseases, it a bad symptom when the patient grows thin too fast, that is to say, when the emaciation is disproportionate to the progress of the malady—it indicates great debility or complication. The progressive emaciation in consumption, hectic fever, or large abscesses, is usually a mortal symptom. The wasting of the whole body in ascites, especially if the abdomen is enlarged by seious effusion, is unfavourable. Also, if prolonged after an attack of acute disease, it is indicative of hectic fever, or threatening consumption. In these cases, there probably exists congestion, or violent irritation of some organ. In
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convalescence, generally, if the patient continues thin, although he eats heartily, a relapse may be anticipated.

Tumefaction of the body.—The general tumefaction of the body may be inflammatory, edematous, or emphysematous. The first occurs in ardent fevers, the phlegmasia, and in extensive eruptions. In general, the greater the tumefaction, the more intense the disease; but when this symptom is connected with the nature of the malady and is regular in its progression, it is of no consequence. If the tumefaction ceases suddenly, before the crisis of the disease, it is indicative of its protraction, delirium, or death. If it continues after a crisis more or less favourable, it is an evidence that the disease is not completely removed, and a relapse may be expected. This tumefaction, favourable in all great eruptions, is especially so in the small-pox, when it progresses regularly from the period of invasion, to that of desquamation—affecting every part of the body from the head to the foot; but it is an unfavourable symptom, when the tumefaction is prolonged beyond this period—anaasarca or ascites is to be apprehended. Also, when the enlargement continues in one part when it has ceased in others, the formation of abscesses is to be feared. Previous and during an attack of sanguineous apoplexy, the body has an inflammatory intumescence, most apparent in the face, but often so over the whole body. Edematous tumefaction of the body occurs after intermittent fevers, especially quartans, during the course of chronic diseases and in intemperate persons.

Edema is, under some circumstances, the effect of the suppression of some habitual evacuation which has become necessary, or of an eruptive disease; in these cases it is an unfavourable symptom, and is only removed by the restoration of the discharge, or the return of the eruption. When it occurs during pregnancy, it equally disappears after the period of confinement. If it continues afterwards, congestion of some of the viscera, asthma, or organic disease of the heart is to be apprehended. General edema often terminates spontaneously, after abundant perspiration, copious urinary discharges, or diarrhea. Partial edema occasionally terminates
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in scirrhous enlargements. Scarlet fever is frequently followed by edema, which shows itself about the ninth or tenth day, and the disease often terminates in serous effusion in the chest or abdomen. Previous to an attack of serous apoplexy, the body often presents an edematous appearance. In aggravated scorbustic diseases, edema is always an unfavourable, and frequently a mortal symptom.

Emphysema occurs after severe wounds—especially those which penetrate the chest, and during the course of certain phlegmasiae, whether acute or chronic. It is sometimes complicated with dropsy, and is a termination of intermittent fevers. In all these cases, this symptom ought to have but little weight in forming a prognosis.

Symptoms drawn from the general state of the skin.—The principal alterations of the skin which furnish useful materials to the semeiologist, are relative, 1st. Its colour; 2d. Its temperature; 3d. Its humidity or dryness; 4th. Its inequalities.

Colour of the skin.—A deep red colour of the skin is a symptom of inflammation, or at least violent irritation, unless habitual to the individual. If the redness is confined to some part of the body, with tumefaction and itching, this part is likely to be the seat of erysipelas. If, during an eruptive disease, or an inflammation, the redness suddenly subsides without an apparent cause, it is a very bad sign; it indicates extreme prostration, an internal metastasis, or even approaching gangrene in the part inflamed. In acute diseases, extreme paleness of the skin is a bad sign, unless it has progressively increased with the different periods of the disease, and is in a measure removed as convalescence approaches; if otherwise, a relapse, or a chronic affection is to be feared. The skin is pale in the commencement of acute and chronic inflammations of the viscera, afterwards it becomes of an olive tint—when in acute diseases the pallor of the skin changes to lividity, it is a very bad omen; the disease will then become putrid or malignant. If one of these states exist, and the disease goes on increasing, death is certainly very near. A livid colour of the skin frequently is observed in large abscesses
of the liver; also, after the exhibition of certain poisons, and especially in pestilential diseases, when death is at hand. It is also a fatal symptom in dropsies, particularly so in ascites, and frequently occurs in the last stage of scurvy. A yellow colour of the skin is characteristic of icterus. This disease is either idiopathic or symptomatic. I shall confine myself to the latter, as more immediately connected with the science of prognosis. Symptomatic icterus is an unfavourable symptom in acute diseases if it occurs before a crisis, and the contrary if it occurs at that period, and is unconnected with disease of the liver. Icterus frequently occurs after violent colics. In acute or chronic inflammations of the liver, the yellow colour of the skin has no other signification than what is relative to the violence of the disease; with which it is generally commensurate, the same in the violent bilious fevers of warm climates. When the skin is of a greenish colour in icterus, and afterwards becomes a bright yellow, it is an evidence of the subsidence of the disease. In elderly persons, a dark colour of the skin frequently occurs, consequent to an attack of intermittent fever, especially quartans. In these cases, consumption is to be feared. If the skin frequently changes its colour in acute diseases, it is either a fatal symptom, or indicates a tedious recovery. In all cases, great derangement of the nervous symptom exists.

Temperature of the skin.—Many accidental circumstances cause a variation in the heat of the human body, entirely unconnected with disease, as atmospheric temperature, clothing, exercise, the process of digestion, and the abuse of spirituous liquors. Those variations which ought to be considered morbid, are preceded, accompanied, or followed by correspondent symptoms. An augmentation of the natural heat of the skin is one of the signs of fever and inflammation, and generally of a state of great excitement. An inequality of temperature in the different parts of the body, is always an unfavourable symptom, especially in fevers of a typhoid nature. In phthisis, an increased heat in one cheek, hand, or foot, indicates that the lung on the correspondent side, is the
principal seat of the disease.* If the external surface is cold, while the patient complains of burning heat internally, it denotes an inflammation of some of the viscera, and is always dangerous. When a part of the body is preternaturally cold or hot in the commencement of disease, it indicates that it will be the principal seat of the disease.

Humidity and dryness of the skin.—A very moist skin indicates debility, and is a bad symptom in the invasion of disease, especially if it be of long continuance. In consumptive patients, it is soon followed by night-sweats, which are the precursors of death. An equable moisture of the skin, followed by sensible ease, often precedes favourable crises. Great dryness of the skin in the invasion of acute diseases, is symptomatic of inflammatory or high bilious fever; if this state continues after their termination, or during the course of a chronic disease, hectic fever or consumption is to be feared. Aridity of the skin is generally present in a disease, during its period of irritation, and when this continues without intermission, we may be confident that a crisis is not at hand. Sometimes, however, after this state of skin is followed by moisture, and dryness again succeeds, then a crisis is near, and the dryness of the skin will not long continue.

* This partial flushing, especially observant on the cheeks of consumptive patients, is never confined to one side of the face, but varies continually.

[To be continued.]
We resume, at this time, our analysis of the medical papers contained in these volumes; and in following the order previously laid down, we come next to those included under the head of

THE PRACTICE OF PHYSIC.

These consist of ten papers; some of which relate to Pathology and the Treatment of Diseases, while the remainder notice what are commonly styled, the Remote Causes of Epidemics and Endemics.


The subject of Dr. Gloster's case was a negro, aged forty years, who, after having suffered the excessive heat of the sun
during the day, laid himself down and slept on the damp ground in the night. He awoke with a stiffness in the muscles of the jaws, and the disease rapidly proceeded to its most exquisite state.

Having observed, in the *London Medical Essays*, that this complaint had been successfully treated with large quantities of opium, and having premised venesection and gentle purgatives without effect, Dr. Gloster was induced to try that remedy.

He commenced with five grains, united with nitre and camphor, and administered every three hours—and the next day increased it to seven grains. No effect was produced—neither sleep nor disturbance of mind. A warm bath was ordered, and a linament applied over the surface. The quantity of opium was gradually augmented, until twenty grains were given every three hours. This, on the eighth day after the accession of the disease, caused a diminution of the spasms, but no perceptible relaxation of the muscles of the jaw. Enemas, linaments, friction, and baths were faithfully used. The symptoms gradually moderated, and the opium was continued (with cinnabar and musk) in reduced doses, but still in considerable quantity—so that at the end of seventeen days, he had taken fifteen hundred grains. Spasms occasionally recurred for some weeks after, but they were removed by the use of this remedy.

Dr. Rush, on the other hand, who had seen several cases, both in the United States' Military Hospitals and in private practice, never succeeded in a single instance with opium. This led him to inquire into the nature of the disease, and finding it one of warm climates and warm seasons, he was induced to ascribe it to relaxation. He determined to treat it on this principle; and being shortly after called to visit Colonel John Stone, who was wounded in the foot at the battle of German-town, found him "in the third day of a tetanus." His spasms were violent and exquisitely painful—his head was thrown backwards, and his jaw had become stiff and contracted. He was taking opium in large quantities. Dr. Rush discontinued its use, and gave him wine and bark in large
quantities, to the amount of two or three ounces of the latter, and from a bottle to three pints of the former during the day. In a few hours, the spasms became less violent and frequent, and he slept for a short time. A blister was now applied between the shoulders, and mercurial ointment rubbed upon the outside of the throat. He rapidly improved under this treatment, and in ten days was out of danger.

In a case in private practice, which originated from sleeping on the damp pavement, the same medicine proved highly useful. Oil of amber in large doses, was substituted with great success, when the tonic powers of the bark and wine began to lose their effects.

In a third case, from a wound with a nail, Dr. Rush dilated the torn part and filled it with lint, dipped in spirits of turpentine. This produced pain and inflammation in the foot, but on the next day, when about to administer bark and wine, the pains and spasms suddenly left him, and in twenty-four hours, he complained of nothing but soreness and swelling in the part, which continued for several weeks, and finally ended in suppuration.

In confirmation of his opinion, that this disease originates from relaxation, Dr. Rush observes, that it is generally produced by heat: watchings, marches, fatigue, also excite it; and wounds more certainly induce it, "if they have been preceded for some time with warm weather. Dr. Shoepfl, the physician general of the Anspach troops, that served at the siege of York in 1781, informed me of a singular fact upon this subject. Upon conversing with the French surgeons after the capitulation, he was informed by them, that the troops who arrived just before the siege from the West Indies, with Count De Grasse, were the only troops belonging to their nation that suffered from the tetanus. There was not a single instance of that disorder among the troops who had spent a winter in Rhode Island."

We pass over the ratio medendi of Dr. Rush, in which he accounts for the utility of bark and wine, on the ground that the disease requires stimulating remedies. If opium succeeds, it does so, only, he observes, in large doses; and here,
probably, its sedative effects are lost in its stimulating. But he prefers the others to it, being more direct in the operation, and not so apt to induce dangerous consequences. On one point his advice cannot be too much prized—namely, the necessity of inducing local inflammation in the injured part at an early period.

Animals are subject to tetanus. Dr. Rush saw several instances in horses, from running nails into their feet and other accidents. The muscles of the neck became rigid, the jaw was locked, and the limbs stiff. Although it generally proved fatal; yet our author saw two cases cured by applying the potential cauterity to the neck under the mane; by large doses of oil of amber; and by plunging one of them into the river, and throwing buckets of cold water over the other.

Dr. Rush had seen three cases of *trismus nascentium* in his practice. Dr. Cadwallader Evans, who had resided several years in the island of Jamaica, witnessed many cases, which all proved incurable, until he began to purge every child born on the estate committed to his care. He was induced to do so from an opinion that it originated in a retention of the meconium, and the result of this precautionary treatment was, that he never afterwards met with a case among children.*

3. An Enquiry into the nature, cause, and cure of the Angina Suffocation, or Sore Throat Distemper, as it is commonly called by the inhabitants of the city and colony of New-York, &c. By Samuel Bard, M. D. and Professor of the Practice of Physic, in King’s College, New-York. Communicated to John Morgan, M. D. F. R. S. Professor. Vol. I. p. 388.

* We have been particularly struck with the necessity of occasionally recurring to the original writings on medical subjects, from looking into a learned and systematic work, and which is generally very accurate on the disease above noticed. In the Study of Medicine, (Vol. III. p. 226, Boston edition, 1823,) Dr. Gloster is said to have given only *five hundred grains* in seventeen days. Dr. Good, also, in the same page, quotes Dr. Talman in the Amer. Phil. Transactions, Vol. I. as having tried the cold bath with success. Now there is no paper by Dr. Talman in any of the volumes—nor can we find his name mentioned.

"Take of lime-juice or lemon-juice three ounces; of marine salt as much as the acid will dissolve, of any simple distilled cordial water one pint, and of loaf sugar, a sufficient quantity to sweeten it. The dose of this mixture must be proportioned to the age, sex, and violence of the disease. A wine glassful may be given to adults every two, four, or six hours."

Dr. Wright, (with whose name the writings of Dr. Currie have made us familiar) found this preparation eminently useful. In dysentery, after gentle purgatives, it corrected the frequency of the stools, gripes, and tenesmus, and restored the strength and appetite. In remittent fever, particularly when diarrhœa was present. Here Dr. Wright never found the bark of service, but the mixture relieved the bowels, and at the same time often removed the fever. In the belly-ache, with inflammatory symptoms, after the use of venesection, repeated doses of castor oil, fomentations, and enemas. The patients, notwithstanding these remedies, would continue suffering under pain with liquid, fetid stools, cold sweats, and furred tongue. The stomach also was sickened. In this dangerous situation, bark had sometimes proved useful, but of late, Dr. Wright had solely used the antiseptic mixture. The stools became less frequent and more healthy, the cold sweats disappeared, and the appetite returned. Lastly—in the putrid sore throat, which was epidemic in 1770. "Antimonial wine, with cordials and nourishing diet succeeded best, till the sloughs or spots were removed and separated; then the bark completed the cure. When a diarrhœa accompanied the disorder, I gave the mixture with success."

In all disorders where a gargle is necessary, Dr. Wright gave the mixture in preference to any other.

Where lemons or limes cannot be had, vinegar or cremor tartar may be substituted in their room.
Dr. Cathrall concludes his Memoir with noticing the opinions of authors concerning the black vomit. They may be classed, he observes, as follows:

1. *That it consists of putrid bile.*—This opinion appears to have been adopted merely from its being found on dissection, in the gall bladder. The properties of each are, however, very dissimilar. The black flaky substance, which is the only part bearing the least analogy to bile, is generally of a darker colour and a thicker consistence. It imparts a black or brown tinge to linen, whereas bile, even when putrid, gives a yellow colour. Again—Experiments with each give various results. Sulphuric acid converts the flaky substance into a fatty matter, while putrid bile is dissolved into a blackish green liquor. The specific gravity of the former is 1.025, that of the latter is 0.125.

2. *That it consists of putrid blood, or of a mixture of blood and bile.*—But blood, kept for months, gives a red colour to water, and its properties are not destroyed by putrefaction. It exhibits no flaky particles, and is not converted by acids into a fatty matter.

3. *That it consists of the villous coat of the stomach, in a state of dissolution, produced in consequence of inflammation, terminating in mortification.*—To this he objects, that the black vomit is frequently thrown up in large quantities, when the stomach, after death, has not been found much inflamed, or spachelated. The dissections of Dr. Robert Jackson, of Dr. Lining of Charleston, Desportes of St. Domingo, and Dr. Physick, all contradict the idea, and seem to prove that the black colour of the vomited matter is owing to a mixture of vitiated bile.

4. *That the black vomit is bile changed to a black colour by meeting with the septic acid (of Dr. Mitchill) in the stomach and intestinal canal.*

Having dismissed all these opinions as incorrect, Dr. Cathrall next advances his own belief, viz. *that it is an altered*
secretion from the liver. Dr. C. grounds this conviction on the following considerations, (p. 29—32.)

"The colouring matter of the vomit appears, from the authors already quoted, to be generally traced, after death, to the gall-bladder. This position being incontrovertibly established by dissections, the power of the liver to secrete that substance will be admitted, of course, as it could not be secreted by the gall-bladder, or transmitted into that viscus through any other passage, but by the hepatic duct. If this view of the subject be, in any measure, just, it is a fact, ascertained beyond the shadow of a doubt, that the black flaky substance of the vomit is an altered secretion from the liver. This matter, being secreted by the liver, and deposited by the hepatic duct in the gall-bladder, in the last hours of this disease, is from thence forced, by the contractions of the gall-bladder and cystic duct, in conjunction with the violent action of vomiting, into the stomach. It there receives the addition of the yellow-coloured fluid, which is almost always ejected with the flaky substance. That this fluid is combined with the flaky matter in the stomach, and not in the gall-bladder, every inquiry into the appearances after death fully confirms. This circumstance renders the yellow-coloured fluid subject to some difference in its properties, according to the nature of the fluids received into the stomach a short time before vomiting: but all that I have had an opportunity of examining, have nearly the appearance we have already described. That the secretory economy of the liver may be so far arrested in its healthy action, by the progress of disease, as to assimilate a fluid having not the least analogy to bile, every work on morbid dissections certainly prove [proves.] Lieutaud mentions a case from Rivalerius, in consequence of a diseased liver, where the fluid in the gall-bladder resembled milk; and Storke relates a case of a dropsy succeeding an intermitting fever, where the fluid in the gall-bladder resembled the white of an egg. To these I may add one that came under my own observation, of a gentleman who died dropsical, in consequence of an enlarged liver. The gall-bladder contained a fluid of a dark colour, having not the least resemblance to bile. These, and many more cases, could be adduced to prove the power of the liver, under certain circumstances, to secrete a fluid dissimilar to bile; but it would be needless to recite them, as the instances already quoted are, no doubt, sufficient to establish the fact. This peculiar condition of the secretory vessels, in the yellow fever, is not confined solely to the liver; for we find that other secretory functions are sometimes affected in a similar manner, during the same disease, and nearly at the same period of time. In confirmation of these observations, I believe most physicians must have remarked, that, in some cases, the kidneys, during the period of black-vomiting, secrete a fluid of a dark colour, which has a thick pellicle on its surface, and appears almost as different from urine as the black vomit does from bile. This discharge is generally a precursor to a symptom which never fails to predict a speedy dissolution, viz. a paralysis of the secretory functions of the kidneys.
"The more I consider the material change produced in the different secreting vessels, during the last stage of this disease, the more this theory appears to be supported by reason and the plausibility of truth. But, though a morbid condition of the glandular economy of the liver may produce the coffee-ground coloured vomit, it does not seem probable that the black inspissated mucous matter which was ejected in the cases which proved mortal in 1797, is derived from the same source; for the liver, under no condition of diseased action that we are acquainted with, is capable of secreting mucus of such an appearance; therefore, we think it most reasonable to refer it to the surfaces, which are destined, in a state of health, to secrete mucus. Now, admitting the axiom, 'that similar causes produce similar effects, under similar circumstances,' why may not the glandular structure of the stomach be affected in a similar manner to that of the liver and kidneys, so as to enable it to secrete the mucous matter above-mentioned? This opinion, I think, may be affirmed by other analogies, not only in the sthenic, but in the asthenic condition of secreting surfaces, in which there are equally as great a deviation from healthy secretion as the one alluded to. This we have clearly exemplified in vessels destined to secrete mucus in a state of health; but when labouring under inflammation, evidently secrete pus."

6. An Account of a case of disease, in which one side of the Thorax was at rest, while the other performed the motions of respiration in the usual way. By C. Wistar, M.D. Read December, 1814. Vol. I. New Series. p. 361.

This is a very curious case, and we give it in the words of Professor Wistar.

"In the course of last summer, a gentleman was attended by Dr. Monges and myself, for a hæmoptysis, which occasioned his death. During his indisposition, we observed that one side of his thorax was neither dilated nor contracted during respiration, and that the ribs on that side were perfectly quiescent, although those of the other side performed more motion than usual, and therefore dilated that side of the thorax to an uncommon degree. We first noticed this some days before his death, and it continued so, without any alteration, during the remainder of his life. He made no complaints of pain or uneasy sensations, on the side which was without motion, but said that he had sensations on the other side which he believed were produced by the passage of blood from the
ruptured blood-vessels. Some years before, he had suffered with haemoptysis and a consequent cough and expectoration, but he recovered from this so much, that he was strong and rather corpulent at the time of his last attack. Upon dissection, the cause of this extraordinary mode of respiration was very obvious. That cavity of the thorax, which was without motion, was filled with pus. The volume of the lung of that side was greatly diminished, and the cellular structure of the organ entirely done away."


Dr. Rush remarks that Pennsylvania has, for some years previous to the date of his communication, become more sickly than formerly. "Fevers, which a few years ago appeared chiefly on the banks of creeks and rivers and in the neighbourhood of mill-ponds, now appear in parts remote from them all, and in the highest situations." This change is referred to three causes:

1. The establishment and increase of mill-ponds. "There are whole counties in Pennsylvania, in which intermittents
were unknown, until the waters in them were dammed, for the purpose of erecting mill-ponds."

2. The cutting down of wood, or as it is technically called, clearing a country. The rays of the sun are thus permitted to act freely on the moist earth.

3. The different and unequal quantities of rain which have fallen within the last seven years. The summers of 1780, 1781, and 1782, were dry, and reduced the creeks and rivers far below their ancient marks, while the spring, both of 1784 and 1785 was very rainy, and swelled them beyond their natural heights. When the inundations subsided, they left a large surface exposed to the action of the sun, and of course to the developement of marsh miasmata. Dr. Rush observes, that a rainy season is not, in itself, unhealthy; "it rather prevents fevers"—but dry weather succeeding to this, develops the causes of disease. It is remarkable, (he adds) that a wet season is often healthy in low, while it is sickly in hilly countries. "The reason is obvious. In the former, the rains entirely cover over all the moist grounds, while in the latter, they fall only in a sufficient quantity to produce those degrees of moisture which favour febrile exhalations."

Dr. Rush now adds some hints for obviating and preventing fevers. He advises the planting of trees around all the mill-ponds, (besides cleaning them occasionally) and in the greatest numbers to leeward of the ordinary current of the summer and autumnal winds. He has known instances where dwellings thus situated, near mill-ponds, have been exempted from the visitation of fevers. The trees act mechanically, in sheltering the pond from the action of the sun, and thus lessening exhalation, and also chemically, by absorbing unhealthy air, and discharging it in the pure state, now called "dephlogisticated air."

Cultivation should always keep pace with the clearing of lands. All moist spots should be drained—the weeds should be destroyed—the brush burnt, and the whole soil ploughed and sowed with grass or grain.

Among the individual means of prevention, he advises—the use of woollen as an article of dress in the autumnal months
—a generous diet—the avoidance of the evening air—and cleanliness, as well personal, as around the dwelling. Fires should be kept up in the house and even near it, when any particular spots are dreaded as exhaling noxious miasmata.

Mr. Surgeon Wright's plan of "drying up the marshes of the maritime parts of North America," has, we believe, been carried into execution, though in a somewhat different manner from that proposed by him. Evaporation is the grand agent, by means of which noxious miasmata are removed, and this must be promoted by procuring a free circulation of wind over the moist surface. It is this which prevents the ague from being epidemic, or even endemic, in Ireland. "Let it be supposed, (says Mr. Wright) that the north-west and south-east are the asseclæ, or prevailing winds of North America; let the Surveyor General mark out a tract of say 100 or 200 miles, in a right line, to be cleared of trees; then every blast from these two opposite points will ventilate 200 miles of country, bearing along the fumes of all the marshes, while the great vista or avenue, skirted with wood at both sides, would furnish the most salubrious, and consequently valuable situation for settlers."

The Essay of Dr. Currie, refers to a more intricate and unsettled question in the history of endemic causes, viz. The chemical changes that pure atmospheric air undergoes in marshy situations. Assuming the proportions of pure atmospheric air to be 72 of azote and 28 of oxygen in the hundred, he next quotes the experiments of Van Breda on the atmosphere of marshes, in the autumnal season. This, on being subjected to the common test of nitrous air in the eudiometer, gave very different proportions—only 14 or 15 parts of oxygen to 84 or 85 of azote, "but the bulk was supplied, and the same weight preserved, by a certain quantity of carbonic acid gas, and a small portion of hydrogen and ammoniacal gases, or aeriform fluids."

These gases, observes Dr. Currie, are the effects of animal and vegetable putrefaction, and must be derived from the soil. And as the miasmata, arising from marshy situations, are deemed the causes of disease, and no other substances but those
gases, can be discovered to issue from them, it necessarily follows, that the miasmata must consist of one or more of the gases.

The effect of these aeriform fluids on the human system is next considered. Carbonic acid gas, in large quantities, destroys life by its action on the irritability of the muscular fibre of the heart, and in small quantities, or diffused through atmospheric air, it probably would occasion a disease somewhat similar in its nature, i.e. a paralytic one, and "not an intermittent or remittent, since in these last, the sensibility and irritability are manifestly increased."

Hydrogen, from the experiments of Chaptal, De Rosier, and Beddoes, appears to have little or no share in the generation of these diseases. Its inspiration produced only trifling effects. Nor does the mixture of hydrogen with carbonic acid gas, make any alteration, as they neither decompose each other, nor set at liberty any caloric.

Lastly, ammoniacal gas, is a stimulant, except when directly inspired, and then it is deleterious, by producing spasm of the glottis.

These facts would lead us to doubt, (says our author) the doctrine generally taught, respecting marsh miasmata. Oxygen, however, is necessary to the healthy performance of the functions of life, and its diminution must proportionably remove the natural stimulus of the system; and as its quantity is proved, by experiment, to be less in marshy situations, Dr. Currie is disposed to ascribe their unwholesomeness "to a deficiency of the oxygenous portion of the atmosphere in such situations, in consequence of animal and vegetable putrefaction, in conjunction with the exhausting and debilitating heat of the days, and the sedative power of the damp and cold air of the nights." The nervous system becomes preternaturally susceptible, from the inability to perform the functions of the body in a healthy manner. Exposure to cold or damp air, renders the vessels of the skin atonic, and the internal organs, after sympathising with them, react with with increased velocity.

An additional argument in favour of this opinion is derived, by our author, from the occurrence of the diseases in ques-
tion, in situations remote from marshy ground, particularly in large and populous cities, where sedentary occupations and want of exercise render the inhabitants delicate and infirm.

"The opinion, then, arising from a specific matter generated by vegetable putrefaction, appears to be rendered groundless, from the disease varying in its type and symptoms, in proportion to the extent and putridity of the soil, state of climate, season and weather with respect to heat, moisture, &c. and also in its not being contagious; the reverse of which is the case with all known diseases that are derived from specific matter."

Recent and accurate observations have also shown, that the causes of nervous and putrid fevers are not the effluvia of putrid animal substances, but that they are derived "from the living human body in confined and unventilated situations; and it is probable that the effluvia, thus excreted, partake of the quality of nitrogen gas, from their being rendered harmless by a union with oxygen." The contagion, thus generated, is rendered powerful and virulent, in proportion to the absence or defect of oxygen, and the degree of heat to which the living body has been exposed in such situations.

The means advised by Dr. Currie to prevent the occurrence of these febrile diseases, are to "introduce and increase the proportion of oxygen in the superincumbent atmosphere, and to prevent its future abstraction, by cutting off or diminishing the sources of putrefaction." This is principally to be sought for in the art of agriculture—by draining and levelling—consuming dead weeds and wood—and, after drying the ground, by raising grasses. If it be impossible to drain these marshy situations, they should be kept constantly flooded by dams or sluices. This will prevent, in a great degree, the effects of putrefaction.

Dr. Seybert's communication is mainly experimental. He examined, in the first place, air obtained by agitating stagnant water over marshy grounds. It burnt with a blue flame when a candle was applied to it, but did not explode when mixed with atmospheric air. On being agitated with lime-
water, a copious white precipitate was formed, and the bulk of the air was considerably diminished. The nitrous gas eudiometer produced only a diminution of 2-100 of their joint bulks. The absence of oxygen is hence very manifest.

The next examination was of air at some distance above the marshy ground. This gave a less copious precipitate in lime-water. It did not burn or explode when touched with a candle; but mixed with nitrous gas, its bulk diminished almost as much as pure atmospheric air. Hence, while this proves that there is a larger proportion than usual of carbonic acid gas, it is also evident, that the quantity of oxygen is fully equal to that in the air of healthy situations.

Having ascertained these qualities, the next object of Dr. Seybert is to ascertain the circumstances about marshes which produce such effects. Pure air exposed to the action of mud in the summer months, in close receivers, became diminished in bulk, indicated the presence of carbonic acid gas and had less oxygen. The opinion is hence advanced, that the process which goes on in these marshes, is "a decomposition of the stagnant water, effected by the putrefaction of the dead animal and vegetable substances which enter largely into the composition of the soil of marshes. The oxygen of the decomposed water unites with the carbon of the mud, and forms the carbonic acid gas, whilst the hydrogen is set at liberty."

If it be asked why, notwithstanding these results, the air above marshy situations is nearly pure, that is, as to its proportion of oxygen; it must be replied, that it has the advantages of ventilation, and that the living vegetables around them furnish large quantities of oxygen.

**MISCELLANEOUS.**

Under this head we arrange seven papers: five of which belong to what is properly styled medical statistics, while the remaining ones treat of the education of the deaf and dumb and the construction of hospitals. In analysing the statistical papers, we shall strictly confine ourselves to the facts stated, leaving to some more appropriate and convenient sea-
son the comparison of the data here given, with subsequent investigations. We need hardly mention, how important the subject under consideration is to the medical philosopher—in reference to the causes of disease, the increase of population, and the duration and prolongation of life. We propose, at some future period, to notice it in detail, with particular reference to this country; and, if we are not mistaken, we shall show, that the speculations and assertions of many foreign writers, on this subject, are as unfounded as the spirit that dictates them is unfriendly.


Mr. Barton commences with some general remarks on the causes of the increase of population. Amongst them he ranks, a salubrious climate; fertility of soil, and consequent facility of obtaining subsistence; virtuous and simple manners of the great body of the inhabitants, and, as a result from this, early marriages; and lastly, a well ordered government. All these he considers as enjoyed by the citizens of this country.

He next proceeds to illustrate and compare the increase of our population, and the duration of life in the United States, by certain statistical facts; and these he classifies as follows:

1. The number of births to each marriage. In England, the most accurate observers reckon about, or a little above, 4 births to a marriage. In France, the number is considered to be 4½. In the Pays de Vaud, (medium of ten years) 3.90. In Berlin, according to Dr. Price, 3.93; while, in Amsterdam, it was only 1.92 births to a marriage.

Mr. Barton could only obtain the proportion in one place in this country, viz. the parish of Hingham, (Massachusetts.) During fifty-four years there were 2247 births, 1113 deaths,
and 521 marriages: “Giving (says Mr. Barton) 6.25 births to a marriage.” This is evidently incorrect, and it is certainly surprising how Mr. Barton came to fall into this error. The true proportion is 4.31 births to one marriage.*

2. The number of persons to a house or family, as a means of ascertaining the number of births to a marriage. In some of the healthiest parts of Europe (says Mr. B.) 4.50 persons is a large allowance. But according to the late census (1790) in Massachusetts there are 5.75 souls to a family in that state, exclusive of Indians and negroes. The proportion to a house is 6.85—since the families are to the houses as 6 to 5. The number of persons to a family, in Boston, is . . . 5.39

Salem, . . . 5.30
Marblehead, . . . 5.12
Newburyport, . . . 4.84
Ipswich, . . . 5.06

3. The proportion of births to the whole population. From data, drawn from the writings of La Place, Buffon, Price, &c. Mr. Barton deduces the proportions of these as follows:

In France, one birth to every 26 inhabitants.

<table>
<thead>
<tr>
<th>Place</th>
<th>Births per Inhabitant</th>
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</thead>
<tbody>
<tr>
<td>England</td>
<td>26.50</td>
</tr>
<tr>
<td>Paris</td>
<td>30</td>
</tr>
<tr>
<td>London</td>
<td>32.50</td>
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</table>

While in Philadelphia, the proportion is one to every 22.50
Making the births decidedly more numerous.

4. The proportion of the population below sixteen years of age to the whole number. Dr. Halley computes this at one-third, or . . . . . . . . . . . . 33.33 to 100. But by a census of New-Jersey, taken by order of the government at two periods (1738 and 1745) the proportion

* Mr. Malthus, in his Essay on Population, (vol. 2nd) notices this error of Mr. Barton. The above return, from the parish of Hingham, is taken (although Mr. Barton nowhere mentions it) from a paper of the Rev. Dr. Wigglesworth, in the Transactions of the American Academy of Arts and Sciences.
in 1738, was . . . . . 47.63 to 100.
in 1745, . . . . . . 49.55 to 100.
Massachusetts (recent census) free white males, 48.02 to 100.
Philadelphia, . . . . . . . 42.05 to 100.
The high proportion, between the respective classes, is further illustrated by Mr. Barton in tables drawn from the United States' census for 1790, which he gives in his postscript, and which we shall copy.

5. Excess of births over deaths. Mr. Barton compares various countries and places in Europe with towns and villages in this country. We select only a few of the former.

Proportion of one hundred annual births to annual deaths:
Paris, (average of several statements) . . 100 to 100.99.
London, (26 years) . . . . . . . 100 to 124.92.
Denmark and Norway, 1764–5, . . . . 100 to 93.17.
England, . . . . . 100 to 80.
France, from 1754 to 1763, . . . . . 100 to 76.94.
Kingdom of Prussia, 4 years ending 1718, 100 to 57.43.

Whereas, in this country:
Philadelphia, for 16 years, 100 to 45
for 4 years, 100 to 56.50
for 2 years, 100 to 49.94
general average for 22 years, 100 to 50.48.

Salem, medium of 1782 and 1783, and including still-born in the number of deaths, 100 to 49
In 1783 the measles were epidemic.

Hingham, (Mass.) . . . . . . . 100 to 49.50.

6. Comparative Longevity. Dr. Halley, in his Breslaw table, computes that 34 out of 1000 survive to the age of 80.

In the Pays de Vaud, the number is 46.50 out of 1000.

A country parish in Brandenbergh, 44.44 out of 1000.

These are among the most favourable.

In London, according to Dr. Price, 16.46 out of 1000.

Edinburgh, . . . . . . . 24 out of 1000.

Vienna, . . . . . . . 15 out of 1000.

On referring to places in this country, where the subject has been noticed, we find, that at
Ipswich, (Mass.) out of 164 deaths, in ten years, 21 survived 80 years.

Hingham, out of 1113 deaths, in 54 years, 84 survived 80.

Milford, (Connecticut,) out of 239 deaths, in 6 years, 33 survived 70.

Do. 417 deaths (from 1771 to 1782) 31 survived 80.

In the state of Connecticut, according to Dr. Morse, "one in 46 of the inhabitants, living in 1774, were upwards of 70; and from actual calculation, one in eight live to 70, one in thirteen to 80, and one in about thirty to 90." Reducing the above to the proper proportions, and adding others, we find the following:

Ipswich hamlet, .... 128 in 1000 survive 80 years
Hingham, .... 75.47 do.
Connecticut (the whole state) 74 do.
Milford (Connecticut) 74 do.
Salem (Mass.) 1788, 1790, 26 do.
Philadelphia (4 years) 25 do.

7. Proportion of annual deaths to the whole number of living. This, as we would readily suppose, varies greatly as to town or country. Dr. Price estimates the proportion, in

London and Edinburgh, at 1 in 21.
Rome, .... 1 in 23.
Amsterdam, .... 1 in 24.

Sussmilch considers the mortality, in large towns, at 1 in from 24 to 25; in small towns, 1 in from 28 to 31; and in the country, 1 in from 40 to 50. Dr. Price is, however, inclined to lessen the numbers. In Philadelphia, however, the mortality was found to be only .... 1 in 45; and

in Salem (4 years) .... 1 in 47
in Savannah (Georgia) 1 year, .... 1 in 31.70.

In the Postscript to his letter Mr. Barton gives some curious tables, deduced from the then recent census (1790) of the United States. They furnish some striking facts, as it respects the old and the new States. We give them in a condensed form.
Table:

<table>
<thead>
<tr>
<th>States</th>
<th>Free white males, under 16 years, to every 100 free white males of all ages</th>
<th>Free white females, of all ages, to every 100 free males of all ages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kentucky</td>
<td>52.95</td>
<td>89.78</td>
</tr>
<tr>
<td>North Carolina</td>
<td>52.54</td>
<td>93.40</td>
</tr>
<tr>
<td>Georgia</td>
<td>51.73</td>
<td>94.77</td>
</tr>
<tr>
<td>South Carolina</td>
<td>51.46</td>
<td>91.24</td>
</tr>
<tr>
<td>Virginia</td>
<td>51.14</td>
<td>94.70</td>
</tr>
<tr>
<td>Delaware</td>
<td>50.75</td>
<td>93.55</td>
</tr>
<tr>
<td>Vermont</td>
<td>49.88</td>
<td>90.49</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>49.65</td>
<td>102.62</td>
</tr>
<tr>
<td>New-Hampshire</td>
<td>49.12</td>
<td>98.90</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>49.11</td>
<td>94.77</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>48.31</td>
<td>102.10</td>
</tr>
<tr>
<td>New-York</td>
<td>48.27</td>
<td>94.12</td>
</tr>
<tr>
<td>Maryland</td>
<td>47.86</td>
<td>94.53</td>
</tr>
<tr>
<td>New-Jersey</td>
<td>47.78</td>
<td>96.10</td>
</tr>
<tr>
<td>Connecticut</td>
<td>47.53</td>
<td>102.94</td>
</tr>
<tr>
<td>South Western Territory</td>
<td>not ascertained by the census.</td>
<td>92.85</td>
</tr>
</tbody>
</table>

The excess of females over males is very striking in States so long settled as Massachusetts, Connecticut, and Rhode Island, while in Kentucky, Vermont, and the south western Territory, the opposite is no less remarkable.

Since Mr. Barton published his essay, a census of the inhabitants of the United States has been taken three times, and it will hereafter be interesting to inquire, how nearly the results deduced from them agree with those we have now quoted.


4. Abstract and results from eight annual statements (1809 to 1816) published by the Board of Health, of the Deaths, with the diseases, ages, &c. in the City and Liberties of Philadelphia. Communicated by John Vaughan. Read Jan. 9, 1817. Vol. I. new series, p. 430, &c.

We shall confine ourselves in this article, as in the preceding, to a simple statement of the facts contained in the respective communications. A part of these appear as official documents, and the whole is published under the high sanction of the society. To those who may compare these tables with the more extensive ones that have lately appeared in a cotemporary journal, some discrepancy will be observed, particularly as to the population of Philadelphia.

**Table I. Population of Philadelphia.**

<table>
<thead>
<tr>
<th>Census</th>
<th>City</th>
<th>Suburbs</th>
<th>County</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1790</td>
<td>28,522</td>
<td>13,993</td>
<td>3,657</td>
<td>46,177</td>
</tr>
<tr>
<td>1800</td>
<td>41,299</td>
<td>26,641</td>
<td>4,201</td>
<td>72,141</td>
</tr>
<tr>
<td>1810</td>
<td>53,722</td>
<td>37,160</td>
<td>3,654</td>
<td>94,536</td>
</tr>
<tr>
<td>1816</td>
<td>estimated at</td>
<td></td>
<td></td>
<td>115,000</td>
</tr>
<tr>
<td>1817</td>
<td>estimated at</td>
<td></td>
<td></td>
<td>120,000</td>
</tr>
</tbody>
</table>

The above includes (in the words of the Philadelphia Board of Health) the population of the City and Liberties of Philadelphia and that part of the County which is connected with the bills of mortality, under notice.

**Table II. Deaths from 1807 to 1817 inclusive, designating also whether above or below twenty years.**

<table>
<thead>
<tr>
<th>Years</th>
<th>Adults</th>
<th>Children</th>
<th>Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1807</td>
<td>1,204</td>
<td>841</td>
<td></td>
<td>2,045</td>
</tr>
<tr>
<td>1803</td>
<td>1,046</td>
<td>1,225</td>
<td></td>
<td>2,271</td>
</tr>
<tr>
<td>1809</td>
<td></td>
<td></td>
<td>2,004</td>
<td>2,004</td>
</tr>
<tr>
<td>1810</td>
<td></td>
<td></td>
<td>2,036</td>
<td>2,036</td>
</tr>
<tr>
<td>1811</td>
<td></td>
<td></td>
<td>2,386</td>
<td>2,386</td>
</tr>
<tr>
<td>1812</td>
<td>8,542</td>
<td>7,458</td>
<td>359</td>
<td>2,159</td>
</tr>
<tr>
<td>1813</td>
<td>8,542</td>
<td>7,458</td>
<td>659</td>
<td>2,291</td>
</tr>
<tr>
<td>1814</td>
<td></td>
<td></td>
<td>2,217</td>
<td>2,217</td>
</tr>
<tr>
<td>1815</td>
<td></td>
<td></td>
<td>2,040</td>
<td>2,040</td>
</tr>
<tr>
<td>1816</td>
<td>1,293</td>
<td>924</td>
<td></td>
<td>2,217</td>
</tr>
<tr>
<td>1817</td>
<td></td>
<td></td>
<td></td>
<td>2,217</td>
</tr>
</tbody>
</table>

| 12,085 | 10,448 | 1,372 | 23,905 |
An abstract is given, showing the number of adults and children that died from 1809 to 1816 inclusive. This will explain the inability to state the annual results.

"From some misunderstanding between the local authorities, relative to the public burying-ground, the Health Officers could, during its three years' continuance, only ascertain the numbers interred there, without a discrimination of disease, age, or sex, viz.—for 1812, 359—1813, 659—1814, 354—total 1372."

These, it will be observed, must necessarily be added to the subsequent tables.

**Table III. Deaths in each month of the year.**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1807</td>
<td>150</td>
<td>118</td>
<td>154</td>
<td>157</td>
<td>133</td>
<td>159</td>
<td>237</td>
<td>266</td>
<td>237</td>
<td>162</td>
<td>155</td>
<td>115</td>
</tr>
<tr>
<td>1808</td>
<td>163</td>
<td>123</td>
<td>154</td>
<td>165</td>
<td>179</td>
<td>227</td>
<td>371</td>
<td>297</td>
<td>155</td>
<td>151</td>
<td>152</td>
<td>121</td>
</tr>
</tbody>
</table>

(1809 to 1816 incl.)

| 1169 | 1091 | 1233 | 1321 | 1223 | 1330 | 1357 | 2078 | 1393 | 1304 | 1203 | 1133 | 16,000 |

| 1812 | 1502 | 1731 | 1651 | 1748 | 1911 | 2307 | 2073 | 2053 | 1766 | 1652 | 1524 | 22,533 |

Add unknown of 1812-13-14......................................... 1,372

23,905

**Table IV. Abstract of the Ages of the registered deaths.**

<table>
<thead>
<tr>
<th>Under 1 year.</th>
<th>From 1 to 2 yrs.</th>
<th>2 to 5</th>
<th>5 to 10</th>
<th>10 to 20</th>
<th>20 to 30</th>
<th>30 to 40</th>
<th>40 to 50</th>
<th>50 to 60</th>
<th>60 to 70</th>
<th>70 to 80</th>
<th>80 to 90</th>
<th>90 to 100</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>1807</td>
<td>614</td>
<td>121</td>
<td>65</td>
<td>79</td>
<td>144</td>
<td>236</td>
<td>172</td>
<td>139</td>
<td>88</td>
<td>79</td>
<td>60</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>1808</td>
<td>533</td>
<td>284</td>
<td>167</td>
<td>98</td>
<td>592</td>
<td>219</td>
<td>186</td>
<td>128</td>
<td>98</td>
<td>81</td>
<td>30</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>1809 to 1816</td>
<td>(4106)</td>
<td>1244</td>
<td>965</td>
<td>960</td>
<td>3617</td>
<td>2053</td>
<td>1533</td>
<td>1660</td>
<td>797</td>
<td>737</td>
<td>354</td>
<td>99</td>
<td>18</td>
</tr>
<tr>
<td>1817</td>
<td>548</td>
<td>138</td>
<td>134</td>
<td>73</td>
<td>256</td>
<td>312</td>
<td>222</td>
<td>162</td>
<td>106</td>
<td>84</td>
<td>61</td>
<td>11</td>
<td>1</td>
</tr>
</tbody>
</table>

| Total         | 7517             | 316    | 950     | 2282     | 2345     | 2113     | 1489     | 1039     | 797      | 505      | 128       | 25        | 590       |

Total........................................................................... 23,905

Add............................................................................... 1,372

23,905

Proportion of deaths under 2 years to the whole number, ... 1 to 3.18
TABLE V. Abstract of Deaths, with designation of the sexes, from 1811 to 1817.

<table>
<thead>
<tr>
<th></th>
<th>Males.</th>
<th></th>
<th>Females.</th>
<th></th>
<th>Children, sex unknown</th>
<th></th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1811</td>
<td>719</td>
<td>562</td>
<td>525</td>
<td>433</td>
<td>147</td>
<td>2,366</td>
<td></td>
</tr>
<tr>
<td>1812</td>
<td>505</td>
<td>419</td>
<td>417</td>
<td>331</td>
<td>78</td>
<td>1,890</td>
<td></td>
</tr>
<tr>
<td>1813</td>
<td>521</td>
<td>306</td>
<td>322</td>
<td>383</td>
<td>93</td>
<td>1,632</td>
<td></td>
</tr>
<tr>
<td>1814</td>
<td>540</td>
<td>375</td>
<td>425</td>
<td>289</td>
<td>156</td>
<td>1,783</td>
<td></td>
</tr>
<tr>
<td>1815</td>
<td>763</td>
<td>371</td>
<td>490</td>
<td>234</td>
<td>132</td>
<td>2,040</td>
<td></td>
</tr>
<tr>
<td>1816</td>
<td>703</td>
<td>450</td>
<td>585</td>
<td>359</td>
<td>182</td>
<td>2,319</td>
<td></td>
</tr>
<tr>
<td>1817</td>
<td>748</td>
<td>438</td>
<td>545</td>
<td>379</td>
<td>107</td>
<td>2,217</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4,499</td>
<td>2,921</td>
<td>3,309</td>
<td>2,553</td>
<td>895</td>
<td>14,177</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Add, Unknown</td>
<td></td>
<td>1,372</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Unknown</td>
<td></td>
<td>15,549</td>
</tr>
</tbody>
</table>

Males ........... 7,420
Females ........... 5,362
Unknown ........... 895

Add, Unknown ........... 1,372

15,549

TABLE VI. Abstract of the principal Diseases.

<table>
<thead>
<tr>
<th>Diseases.</th>
<th>1807</th>
<th>1808</th>
<th>1809</th>
<th>1810</th>
<th>1811</th>
<th>1812</th>
<th>1813</th>
<th>1814</th>
<th>1815</th>
<th>1816</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apoplexy</td>
<td>30</td>
<td>34</td>
<td>31</td>
<td>31</td>
<td>38</td>
<td>34</td>
<td>39</td>
<td>32</td>
<td>35</td>
<td>36</td>
</tr>
<tr>
<td>Cholera</td>
<td>189</td>
<td>230</td>
<td>153</td>
<td>206</td>
<td>210</td>
<td>157</td>
<td>175</td>
<td>127</td>
<td>94</td>
<td>20</td>
</tr>
<tr>
<td>Consumption</td>
<td>306</td>
<td>301</td>
<td>311</td>
<td>306</td>
<td>369</td>
<td>339</td>
<td>216</td>
<td>274</td>
<td>347</td>
<td>434</td>
</tr>
<tr>
<td>Convulsions</td>
<td>127</td>
<td>145</td>
<td>170</td>
<td>133</td>
<td>162</td>
<td>177</td>
<td>126</td>
<td>174</td>
<td>180</td>
<td>167</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>75</td>
<td>74</td>
<td>37</td>
<td>18</td>
<td>35</td>
<td>20</td>
<td>31</td>
<td>25</td>
<td>33</td>
<td>33</td>
</tr>
<tr>
<td>Dropsy in the head</td>
<td>54</td>
<td>67</td>
<td>34</td>
<td>42</td>
<td>73</td>
<td>49</td>
<td>42</td>
<td>35</td>
<td>53</td>
<td>52</td>
</tr>
<tr>
<td>Dyssentery</td>
<td>70</td>
<td>40</td>
<td>20</td>
<td>27</td>
<td>48</td>
<td>24</td>
<td>69</td>
<td>66</td>
<td>44</td>
<td>30</td>
</tr>
<tr>
<td>Fever (no type mentioned)</td>
<td>36</td>
<td>22</td>
<td>17</td>
<td>31</td>
<td>32</td>
<td>29</td>
<td>41</td>
<td>22</td>
<td>35</td>
<td>33</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermittent</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remittent</td>
<td>20</td>
<td>45</td>
<td>52</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malignant</td>
<td>1</td>
<td>35</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malignant Bilious</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hecetic</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Inflammatory</td>
<td>5</td>
<td>10</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>6</td>
<td>1</td>
<td>6</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Scarlet</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Puerperal</td>
<td>7</td>
<td>2</td>
<td>4</td>
<td>12</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>24</td>
<td>14</td>
</tr>
<tr>
<td>Hives or Croup</td>
<td>55</td>
<td>53</td>
<td>33</td>
<td>49</td>
<td>40</td>
<td>34</td>
<td>22</td>
<td>20</td>
<td>30</td>
<td>21</td>
</tr>
<tr>
<td>Hooping Cough</td>
<td>17</td>
<td>11</td>
<td>96</td>
<td>32</td>
<td>54</td>
<td>24</td>
<td>29</td>
<td>23</td>
<td>6</td>
<td>46</td>
</tr>
<tr>
<td>Inflammation of the lungs</td>
<td>43</td>
<td>66</td>
<td>34</td>
<td>12</td>
<td>10</td>
<td>4</td>
<td>12</td>
<td>6</td>
<td>9</td>
<td>19</td>
</tr>
<tr>
<td>Pleurisy</td>
<td>38</td>
<td>35</td>
<td>31</td>
<td>73</td>
<td>67</td>
<td>70</td>
<td>49</td>
<td>65</td>
<td>126</td>
<td>130</td>
</tr>
<tr>
<td>Catarrah</td>
<td>7</td>
<td>23</td>
<td>13</td>
<td>8</td>
<td>10</td>
<td>17</td>
<td>6</td>
<td>19</td>
<td>21</td>
<td>46</td>
</tr>
<tr>
<td>Insanity</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parturition</td>
<td>12</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Small Pox, natural</td>
<td>30</td>
<td>141</td>
<td>95</td>
<td>33</td>
<td>113</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>inoculated</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scrofula</td>
<td>3</td>
<td>6</td>
<td>10</td>
<td>10</td>
<td>16</td>
<td>6</td>
<td>3</td>
<td>13</td>
<td>19</td>
<td>11</td>
</tr>
<tr>
<td>Still-born</td>
<td>84</td>
<td>126</td>
<td>120</td>
<td>139</td>
<td>137</td>
<td>142</td>
<td>66</td>
<td>96</td>
<td>97</td>
<td>94</td>
</tr>
<tr>
<td>Suicide</td>
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This forms the appendix to a dissertation honoured with the Magellanic gold medal, by the society in January, 1793, and entitled, "Cadmus, or a Treatise on the Elements of Written Language."

Dr. Thornton commences by remarking, that it should be first ascertained whether the dumbness is occasioned merely by deafness, or by malconformation of the organs of speech. His advice can be useful to the former only. If young, the subject should be taught to attempt pronunciation, by imitating the motion of children in speaking; and for this purpose, a child who can speak should pronounce, before the deaf child, the letters which you wish him to learn. This should be done slowly, distinctly, and with many repetitions.

The pupil must also be taught to distinguish the various sounds of words in others. This may be effected by opening the mouth and disposing the lips and tongue in their proper position. The mute will attempt an imitation, and the letter, which the sound he makes resembles, should be pointed out to him. If the sound be vocal, let him feel it at his own throat, as well as that of the person instructing. The necessity of frequent repetition with all these is very evident, and the correct imitation may be accelerated by exercising before a mirror.

After having learnt the true sounds of the English letters, the pupil will be capable of reading as well as of speaking. Dr. Thornton particularly recommends the use of prints or drawings in explaining the nature of common objects.

This is a very brief view of the observations of our author. Subsequently to the publication of his essay, the Abbe Sicard has abandoned the attempt to teach the dumb to speak as useless, and really not deserving the trouble required, while Dr. Watson, in England, is an advocate of its practicability and importance. We are not sufficiently acquainted with the merits of the subject to form a decided opinion on it.

This purports to be a short extract from an essay which was transmitted by the author to the Society, but could not be inserted entire, as it contained many remarks of a local nature confined to Paris.

The only important suggestion that we notice is one calculated to obviate the want of perfect ventilation. For this purpose Mr. Le Roy advises, that a large hospital should consist of distinct and separate buildings, each forming one ward, and erected upon arches or columns at a considerable height from the ground. The ceiling or roof of each ward to be formed into spherical arches—while the crown of each arch should open into a funnel, like a common chimney.

In each floor, at proper distances, should be a row of holes, to allow the transmission of air from below, and the rooms may be warmed by placing grates or stoves over these holes.

We have been forcibly struck with the diminution, and indeed absence, of medical papers in the American Philosophical Transactions, of late years. Since 1814, only three have been published. Dr. Dorsey's, bearing the date of 1817, is the last. And yet the pretensions of the living are fully equal to the deserved reputation of the dead. Perhaps it is intended to confine their investigations to medical journals.

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The translator of this valuable little work, has rendered an acceptable service to the profession by contributing to the
more general diffusion of knowledge, concerning the most efficient agents of the Materia Medica. It would be useless to dwell upon the merits of the remedies considered as a class, which have, within a few years, been brought into notice by the discoveries of the chemists. These are now sufficiently attested by the general use of some of them, and by the high success which has attended their administration. Many of them, however, have scarcely been introduced to the profession in this country, and for our knowledge of them we are almost exclusively indebted to French chemists and French physiologists.

With a view of directing the attention of our physicians more particularly to the examination and employment of these new medicines, we shall offer a brief account of each. In doing which, we shall depend, chiefly, upon the work before us, the author of which has contributed, perhaps, as much as any other individual, to the information which we, at present, possess concerning them. We shall, in all cases, omit the more complicated chemical processes by which many of these articles are obtained, as they will seldom be employed by the practitioner.

Resin of Nux Vomica.—The alcoholic extract of Nux Vomica is prepared as follows: Take a determinate quantity of nux vomica rasped; exhaust it by alcohol of 40°, and at the lowest possible temperature, renew it until nothing more is derived from the rasplings; then evaporate slowly to the consistence of an extract.

Alcohol much more feeble, might be used; but then a matter, much less active, will be obtained, because this alcohol dissolves a great quantity of gummy matter.

The dry alcoholic extract is obtained by filtering the strongest alcoholic tincture, and evaporating upon plates.

Physiological properties. A grain of this extract, absorbed at any point of the body, or mixed with the food, causes quickly the death of a middling sized dog, producing attacks of tetanus, which, by prolongation, impede respiration until complete asphyxia is produced.
When the dose is much stronger, the animal appears to perish by the same action of the substance, on the nervous system. A contraction of the spleen is observed in animals poisoned by the extract, and when an animal, under the action of it is touched, a convulsive motion takes place, similar to a strong electric shock.

The section of the spinal marrow behind the occiput, and even the complete beheading; does not prevent the effects of this substance from taking place, and even from continuing some time. This character distinguishes the action of the alcoholic extract of strychnos, from that of all other substances at present known. The excitement of the spinal marrow is only transmitted to the muscles by the anterior roots of the rachidian nerves: the posterior roots have not the same property.

The action of the alcoholic extract on man in health, is the same with that just described, and if the dose is carried high enough, death happens quickly with the same symptoms. The body offers, likewise, no apparent lesion of the tissue: nothing is observed but traces of asphyxia, which has produced or accompanied death.

Upon a man affected with paralysis, the effects are similar to those described; but they have this very remarkable circumstance, that they are particularly exhibited in the paralyzed parts. It is there that occurs the tetanic agitation; it is there that a feeling of prickling announces the action of the medicine: finally, it is there that is developed a local perspiration which is not observed elsewhere. In hemiplegias, submitted to the action of nux vomica, the contrast between the two halves of the body is striking: while the sound side is quiet, the sick side experiences extreme agitation; tetanic spasms succeed one another rapidly, and a copious sweat appears. A case is mentioned of a woman, in whom the affected side was covered with an anomalous eruption, while the opposite side did not offer the slightest trace. The tongue itself presents this difference between the two halves; one experiences often a bitter taste, very evident, while the other offers nothing of the kind.
If the dose is carried further, the two sides participate, but unequally, in the tetanic effect; so much so, that the patient is sometimes thrown out of bed, so intense are the tetanic paroxysms.

In a feeble dose, the alcoholic extract of nux vomica, like many remedies, has not any action which can be immediately recognised: it is only after a certain number of days, that its advantageous or injurious effects can be appreciated.

The cases in which the extract of nux vomica may be employed, are all diseases of debility, either local or general; paralysis of all kinds, general or partial. It has been used, with decided advantage, in amaurosis with palsy of the upper eyelid, in marked debility of the organs of generation, incontinence of urine, &c.; in cases of atrophy of the superior and inferior extremities. Also, for feeble stomachs, and extreme general debility, with irresistible tendency to sleep. Several cases are related in which palsies of various kinds have been completely cured by the administration of this extract.

It should be stated, however, that it is not proper to give to patients the extract of nux vomica, strychnine, or brucine, but at a distant period from that at which the apoplexy took place, which occasioned the paralysis; and cure is not obtained in these consecutive palsies, where there is cerebral organic lesion; for while such lesion exists in any part of the brain having influence on the movements, the palsies which result are incurable, and it would be dangerous to persist in the employment of these remedies.

Mode of administration.—The preferable form for exhibiting this extract, is that of pills, if it be wished to obtain the manifest effect, that is, the spasms. Each pill should contain one grain of the extract; beginning with one or two, and increasing each day until the desired effect is obtained; then stopping to avoid accidents. It is best to give the pills in the evening, because the night is the best time to observe the phenomena which are to be produced.

Sometimes the dose must be carried to 24 or 30 grains in a day, to obtain the tetanic spasms; but most generally 4 or 6
grains is sufficient. And if, for any reason, the use of the remedy is interrupted for several days, it is necessary to return to small doses, and not to take up the larger doses but by degrees.

When it is desirable to obtain the slight effects of the substance, a grain or half a grain is a sufficient quantity. An alcoholic solution may also be used, of which this is the formula:

- Alcohol at $36^\circ$,
- Dry extract of nux vomica,
- 1 ounce,
- 3 grains.

This tincture is administered by drops, in draught or the drinks, under the same circumstances as the alcoholic extract in substance. It may also be employed in frictions on paralyzed or emaciated parts. This last mode of using it is now much resorted to in Italy.

**Strychnine.**—This is one of the vegetable alkalies discovered by Mess. Pelletier and Caventou. It is obtained from the *Strychnos nux vomica* and *S. ignatia*, in which it exists in combination with a vegetable acid, which these authors have denominated *Igazuric acid*. M. Henry, chief of central pharmacy, has greatly simplified the process for extracting strychnine. It consists in boiling nux vomica in water; in evaporating the liquors to the consistency of syrup; in then adding lime, which takes away the acid and leaves the strychnine uncombined. This is separated from the lime by means of alcohol. The strychnine, dissolved in alcohol, is then obtained from its solvent by evaporation. To obtain it more pure, it is dissolved anew in alcohol, and is crystallized a second time.

Strychnine is usually combined with another alkaline principle, called brucine. But the bean of *S. ignatius* contains strychnine almost exempt from brucine, as Mess. Pelletier and Caventou have proved, and it may, therefore, be advantageously employed to obtain pure strychnine. Unfortunately, however, this article is rare in commerce.

The mode of action of strychnine, is entirely similar to that of the alcoholic extract of nux vomica, only it is more ener-
getic. An eighth of a grain is sufficient to kill a dog of common size: upon a healthy man, a quarter of a grain has often very evident effects.

The cases which require its use, are the same which have been pointed out for nux vomica. Indeed, there would seldom be any occasion for resorting to the strychnine, if the extracts of nux vomica were always made in the same manner, and if they were not subject to vary in strength, according to the process followed for their preparation. In general, then, it is preferable to replace it by the strychnine, by reason of the constancy of its properties and uniformity of its action. The good effects from it are as marked as those obtained from the nux vomica.

Strychnine may be employed in the form of pills or tincture. The following are the formulae given by our author.

**Pills of strychnine.** R Strychnine, very pure, 2 grains, Conserve of roses, 1–2 drachm.

Mix exactly, and make in 24 pills.

**Tincture of strychnine.** R Alcohol at 36°, 1 ounce, Strychnine, 3 grains.

This tincture is given by drops, from 6 to 24, in draughts or drinks.

The salts of strychnine are crystallizable, and for the most part, soluble. It is necessary, therefore, to recollect the great solubility of these salts, when strychnine is mixed in the draughts, or when the drinks are given to the patient; thus lemonade and all acid substances, promote the effect of strychnine. The subcarbonate of strychnine is very little soluble.

These salts are more active, and consequently more poisonous, than the base, because of their great solubility. It would, however, be more advantageous, in some cases, when the patient is used to the action of strychnine, to substitute the salts for the base, without augmenting the dose.

**Brucine.**—This alkaline principle was discovered in 1819, by Mess. Pelletier and Caventou, in the bark of Brucea antidysenterica, (false angustura), in which it is combined with gallic acid, in the state of an acid gallate. The same che-
mists have since found it associated with strychnine in the nux vomica.

In the bean of S. ignatius, and in the upas, the brucine plays the same part with regard to the strychnine, which the cinchonine does with the quinine. The cinchona the most active, contains the most quinine. So the bean of S. ignatius, and the upas tienta, much more active than the nux vomica, contains little brucine and much strychnine. Strychnine is almost pure in the upas.

Brucine is extracted from the bark of the false angustura, by a process similar to that for obtaining strychnine. It crystallizes in the form of oblique prisms, the bases of which are parallelograms. It is more soluble in water than strychnine; has an intense bitter and acrid taste, which is durable in the mouth; and unites with acids and forms neutral salts, most of which are susceptible of regular crystallization. When these are put in concentrated nitric acid, they acquire a more intense crimson colour: by heating, the colour changes to a yellow. If, in this state, a proto-muriate of tin is poured upon them, a superb violet precipitate is produced. These effects are not produced by pure strychnine, and we have thus a ready method of distinguishing between these two alkalies.

The action of brucine, on the animal economy, is analogous to that which strychnine exercises, but is less energetic. According to some experiments of Majendie, the intensity is to that of pure strychnine as 1 to 12; others, however, make the difference greater. It required 4 grains of brucine to kill a rabbit. A middling sized dog having taken 4 grains of brucine, had strong attacks of tetanus, but did not die. The brucine could then replace the strychnine: it has the advantage of producing analogous effects, without the inconvenience of great activity.

Brucine may be used like the strychnine, in pills or in tincture, gradually increasing the dose. For medical purposes, that extracted from the bark of the false angustura should be used: that taken from the nux vomica is too apt to be mixed with a certain quantity of strychnine, which increases its energy, and prevents our calculating the effects.
The cases where brucine may be employed are, of course, similar to those in which strychnine is indicated. It may be given with safety, in the dose of one, two, or three grains; and it is even probable that this dose may be carried much higher, but it should be done with much caution.

The following are formulæ for pills and tincture of brucine:

**Pills.**  R. Brucine, very pure, 12 grains,  
Conserve of roses, 1–2 drachm.

Mix exactly, and divide into 24 pills.

**Tincture.**  R. Alcohol at 36°, 1 ounce,  
Brucine, 18 grains.

This tincture may be given in drops, from 6 to 24, in a draught or drinks.

Brucine, in combining with acids, forms neutral and acid salts, of which the sulphate and muriate being more soluble than their base, present some advantages, and probably have more activity; they may take the place of brucine in the formulæ above given.

**Morphine and its Salts.**—The great difference of opinion among medical men, concerning the powers of opium, has been satisfactorily accounted for since the recent improvement in chemical vegetable analysis. It results from the labours of chemists in this respect, and particularly from the researches of Messrs. Derosne, Setuerner, Robiquet, and Robinet, that opium is composed of

1st. A fixed oil.
2d. A matter resembling caoutchouc.
3d. A vegeto-animal substance.
4th. Mucilage.
5th. Fecula.
6th. Resin.
7th. The remains of vegetable fibre.
8th. Narcotine.
9th. Meconic acid.
10th. Morphine, in combination with meconic acid.
We reject the meconate of soda and the codic acid, which are still retained by the American translator. Robiquet has shown, that the pretended codate of morphine is a muriate, formed by the double decomposition between the muriate of soda and meconiate of morphia, the former of which Robiquet employed in his analysis. The same decomposition shows the source of the meconate of soda. M. Robiquet had admitted his mistake.

It is in the morphine that the narcotic powers of the opium reside, which may be sufficiently demonstrated by the administration of quite feeble doses of the alkali, or more particularly of its salts. Of these, the sulphate, the hydrochlorate, and the acetate, are all employed as remedies, though Majendie gives the preference to the acetate.

From the observations of Orfila upon the action of morphine on the animal economy, it appears,

1st. That morphine, introduced in a solid state into the stomach of a man, acts like the acetate; hence it is inferred, that it is dissolved by the acids found in the viscera.

2d. That the action of the acetate and the other soluble salts of morphine, is very powerful and even poisonous.

3d. That the aqueous extract of opium, prepared in the ordinary manner, acts not only by the meconate of morphine which it contains, but, also, by the narcotine and the other matters which enter into its composition.

4th. That hence, the salts of morphine which are now employed in medicine, do not produce the same effects as opium. Thenard. Traite de Chimie. V. III. 724. 1827.

The salts of morphine may be easily formed; in most cases, by the direct combination of the acid and the alkali. They may be used in the form of syrup, pill, or solution, in doses of from one-fourth to one grain of the salt in twenty-four hours. Upon this point, the following remark by our author, may be of service to the practitioner. "It is necessary to repress, very much, the ideas which were at first formed, respecting the activity of this remedy; and moreover, it is necessary to guard against viewing it as a very subtle poison: on the contrary, it is now ascertained, without
doubt, that to become deleterious, it must be administered in a large dose, and that it should excite vomiting. This last circumstance must be very rare." p. 24 and 5.

The preparation of opium, called black drop, is now quite extensively employed in the United States, particularly in our large cities. Different methods are proposed for its preparation; all which may be resolved into combination of a vegetable acid, generally the cetic or acetic, with opium, and the addition of some aromatic substances, and a little sugar or honey.

This preparation has been highly extolled on the ground that it does not irritate the stomach, nor cause head-ache, vertigo, nausea, &c.; in short, that it is deprived of the exciting powers of opium. But it is evident, that when prepared in the ordinary way, it contains both morphine and narcotine. If, therefore, we desire the pure citrate of acetate of morphine, the acid must be combined with pure morphine, or we must, at least, employ opium which has been deprived of its narcotine.

With regard to the dose it is remarked, that one part of this liquor of citrate of morphine equals about three parts of opium, in cases where a small quantity is sufficient to produce the effect; but when it is necessary to give large doses, we may calculate upon a double activity. It is necessary to avoid giving at the same time with this preparation, either lime water or water of ammonia, or, in fact, any of the alkaline carbonates, because there is always excess of acid.

Extract of Opium deprived of Morphine.—This is the substance which remains after opium has been submitted to the process for obtaining morphine. But upon this we entirely agree with the translator, that "as the quantity of morphine in the extract, besides its containing narcotine, will always vary, it must not only be a useless, but a dangerous medicine; since there will always be an uncertainty in exhibiting it in practice." p. 27.
New Medicines.

Narcotine.—We are still in want of sufficient information concerning this, to entitle it to the rank of a medicine. When given in the dose of one grain, and dissolved in oil, it is said to produce " upon dogs, a state of stupor which persons unaccustomed to experiments, might easily confound with sleep: however, this state evidently differs from it. The eyes are open, the respiration is not deep as in sleep, and it is impossible to rouse the animal from this dull and immovable state. Death occurs, ordinarily, in twenty-four hours.

" Combined with acetic acid, the effects are entirely different; the animal can support strong doses (24 grains) without perishing; and while they are under the influence of this matter, they are agitated by convulsive movements, similar to those produced by camphor; there are the same signs of fear, the same movements backward, the same impossibility to go forward; finally, the same foaming at the mouth, and the same agitation of the jaws," &c. p. 28.

This notice of the effects of narcotine, is sufficient to prove the decided advantage those preparations possess, which contain only morphine or its salts.

Extract of Opium deprived of Narcotine.—For obtaining this extract, the ordinary aqueous extract is treated with ether, which takes away all the narcotine. There appears to be some dispute with regard to the substance. Majendie supposes its effects to be clearly narcotic, and to have an action entirely similar to morphine, but more feeble. This, however, is doubted by the American translator. We may add, that Dr. Hare has recently repeated the process of M. Robiquet, and the denarcotized opium thus obtained, has been used with decided advantage by Dr. Dewees. The cases are to be found in the 12th volume of Silliman’s Journal, p. 291.

Emetine.—An alkaline principle, discovered by M. Pelle-tier, in the root of the cephalic ipecacuanha and of the viola ipecacuanha, to which these articles owe their emetic power. It possesses the advantage of being more active than ipecacuanha itself, of being destitute of its disagreeable taste and
nauseous smell, and is proposed as a substitute for it on all occasions.

Emetine is a white, pulverulent substance, which does not deliquesce by exposure to the air. It acts like an alkali upon vegetable colours. It is dissolved by all the acids, the acidity of which it diminishes; but without entirely destroying it.

The action of emetine may be inferred from its history. Two grains are sufficient to kill a moderate sized dog, and Majendie states, that he has seen vomiting produced in a man by the sixteenth of a grain. It may be administered in some sugar or acetic acid, either in the form of syrup or solution, in divided doses. In general, a grain will be sufficient to produce full vomiting.

The impure or coloured emetine is also recommended by Majendie, as a remedial agent. It possesses powers similar to those of pure emetine, but it is much less energetic. Perhaps it will seldom be employed, except in cases when the pure emetine cannot be obtained. We object to the names emetine and pure emetine, adopted in the Formulary, as leading to confusion. They should be emetine and impure emetine.

Cinchonine and Quinine.—It is chiefly to the labours of Pelletier and Caventou, that we are indebted for the interesting fact, that the virtues of the cinchona barks depend upon two alkaline principles, which have received the above names. The ulterior researches, made upon large masses, have shown that the quinine and cinchonine exist, simultaneously, in the three kinds of bark commonly employed; but in the grey, the cinchonine is, in relation to the quinine, in much larger quantity. The contrary is the case in the yellow bark, where the quinine is so decidedly predominant, that the other frequently escapes notice when small portions are operated on.

Cinchona crystallizes in white translucent needles, only soluble in 700 parts of cold water. It unites with acids, and forms salts more or less soluble. Of these, the sulphate and acetate are used in medicine.

Quinine is white, and is scarcely susceptible of crystalli-
New Medicines.

It is less soluble in water than the cinchonine; however, its taste is much more bitter. Its salts are also, in general, more bitter; they have a pearled appearance which distinguishes them. Quinine is very soluble in ether, while cinchonine is very little so, which affords a means, not only of distinguishing their bases, but also of separating them when they are found united.

'Sulphate of quinine, now so extensively employed, occurs under two forms; viz. that of the sub or neutral sulphate, and the acid or bi-sulphate. The neutral sulphate assumes the form of white crystals, which have the appearance of amianthus; little soluble in cold water, but quite so in boiling water. It possesses the remarkable property of becoming luminous, when heated to the temperature of 212° F. especially if submitted to slight friction. This was first observed by M. Callaud.

The acid or bi-sulphate of quinine, usually occurs in the form of transparent prismatic crystals, which are flat, quadrangular, handsomely terminated, and quite soluble in cold water.

According to M. Baup, the dry acid sulphate of quinine contains, acid sulphate—acid 18.181, base 81.819=100; neutral sulphate—acid 10, base 90=100; neutral sulphate invariably efflorescent—acid 9.57, base 86.12, water 4.31=100.

To obtain this efflorescent sulphate of quinine, it is necessary to expose the common sulphate to the open air, at the temperature of 68° F. Twenty-four hours is sufficient for the salt to become completely efflorescent, and it loses no more by a longer exposure.

It is this efflorescent sulphate, that M. Baup thinks it better to employ in therapeutics, as its composition is invariable. In fact, if the neutral sulphate is preserved in a moist place, it will only contain 76 of quinine in the 100; if, on the contrary, it be kept in a dry place, and in a phial loosely stopped, it will contain as much as 86. Ann. de Chim. et de Phys. Vol. xxvii. 329.

The high value of quinine as an article of the materia me-
dica, is properly appreciated in the following remarks of our author.

"It may be conceived what advantage must result in the treatment of diseases, to know, precisely, the dose of an active substance which is employed, and this advantage is nowhere better marked, than in the case in which we are now engaged, since the quantity of alkalies contained in the barks vary prodigiously, according to the nature and quality of the barks which are employed. We are, besides, often very happy to be able to administer this remedy in so small a volume, and under a form not at all obnoxious. It has been seen, in destructive fevers, that patients perish from this alone; not being able to swallow the necessary quantity of barks in powder; others vomit it up, after having taken it; some take on excessive purging, so that the powder passes the intestinal canal, without producing any effect. In the most favourable cases, it is necessary that the stomach of the patient should analyze chemically, so to say, the bark with which it is filled, and from which it must extract the febrifuge principle; but this labour is always difficult and fatiguing, even to the strongest stomachs; it is, then, a real service which chemistry has rendered to medicine, in having found means to make this separation previously." P. 47 and 8.

It would be entirely useless to advert particularly to the proofs advanced by our author, concerning the utility of the quinine in intermittent fever. The disease may be said to be entirely under the control of this remedy. We would remark, however, that the powers of the article can scarcely be judged of, unless it is given in large doses; and many supposed cases of failure, throughout the country, have undoubtedly been owing to a want of boldness in its employment. Many fevers which have continued under the employment of two or three grain doses, have been completely arrested by the use of 15 or 20 grains at a dose.

The sulphate of quinine is also employed, with great success, in fevers of a low and putrid type, and also, in arresting the progress of gangrene.

Concerning cinchonine, little need be said. If it possesses tonic and febrifuge powers, as has been asserted, it certainly
possesses them in a less degree than quinine, and it will, therefore seldom be employed.

Veratrine.—This vegetable alkali was discovered by Pelletier and Caventou, in the seeds of veratrum subadilla, and in the roots of veratrum album and colchicum autumnale; plants all belonging to the same family.

Veratrine is white, pulverulent, excessively bitter, inodore, fusible at 122° F., almost insoluble in cold water, soluble in a thousand parts of boiling water, very soluble in alcohol, and but slightly so in ether. It combines with the acids, forming salts, which, upon evaporation, assume the appearance of gum. The sulphate is the only one which shows the least tendency to crystallization.

Action upon the animal economy.—When introduced into the nostrils, veratrine produces violent sneezing, which continues for some time. A few grains introduced into the stomach, occasion inordinate vomiting, irritate the mucous membrane, and sometimes even produce death.

"This substance producing the same effects as the plants from which it is obtained, may, therefore, be substituted for them, and with much advantage, since we know, in this case, what we are ignorant of in the other, the quantity of active substance which we make use of." It is also recommended, in those cases where it is necessary to excite, promptly, full alvine evacuations.

The following formulae are offered by Majendie:

Pills of veratrine. Rx Veratrine, 1 grain,
Gum arabic and syrup of gum, a sufficient quantity to make six pills of one grain each. One of these pills may be first given, and if the purgative effects are not obtained, three may be given in a day.

Tincture of veratrine. Rx Veratrine, 4 grains,
Alcohol, 1 ounce.

This tincture is administered in the dose of 10, 15, 20, and 25 drops, in a cup of drink. It may be given, internally, with advantage, instead of the tincture of colchicum, in dropsy, in leucophlegmasia, and anasarca; and to the exterior by friction, in those same diseases, and in gout.
Hydrocyanic or Prussic Acid.—This substance was discovered by Scheele, in 1780; but it is to Gay Lussac that we are indebted for a knowledge of it, in a state of purity. It may be obtained by moistening the cyanide of mercury with muriatic acid, and distilling at a low temperature. The liquid thus obtained, is transparent, has a strong pungent odor, like that of bitter almonds, a sharp and irritating taste. It volatilizes so rapidly, as to freeze itself,—a property peculiar to this liquid.

Hydrocyanic acid, in its concentrated state, is one of the most deadly poisons with which we are yet acquainted. "One drop of it thrown into the gullet of the most vigorous dog, makes him fall stiff and dead, after two or three large, hasty inspirations. A few atoms of the acid applied upon the eye, produce effects almost as sudden, and besides, very similar. A drop of acid, diluted with a few drops of alcohol, injected into the jugular vein, kills the animal upon the instant, even as though he had been struck with lightning. "In animals thus poisoned by prussic acid, traces of irritability of the muscles can hardly be found a few instants after death." p. 63.

Upon man, the effects of pure hydrocyanic acid are similar to those upon animals; even its vapour produces nausea, head-ache, and faintness, and should therefore be avoided. When properly weakened, it is recommended as a means of calming a too vivid irritability, developed in certain organs; such as in those cases where the irritability of the pulmonary organs is morbidly increased; also, in the treatment of hooping cough, of asthma, of nervous and chronic coughs, in the palliative treatment of phthisis. In the last disease, it is said, that a complete cure is often effected, when it is yet in its first degree. Proofs are also adduced in favour of the efficacy of this article in dyspepsia.

With regard to the mode of employing this article, it is remarked, that "the prussic acid, prepared according to the process of Scheele, has not the medicinal properties sufficiently constant, by reason that the process leaves it quite arbitrary to the preparator. It is best, then, to make use of the
prussic acid, prepared according to the process of M. Gay Lussac, after diluting it sufficiently. It is diluted with six times its volume of distilled water, or 85 times its weight. It is this mixture that is designated, under the name of medicinal prussic acid."

We subjoin a formula or two from our author.

_Pectoral mixture._—R Med. prussic acid, 1 drachm.
               Distilled water, 1 pound.
               Pure sugar, 1½ do.

Make a mixture, of which give a pap spoonful morning and night. The dose of this mixture may be raised to six and even eight spoonfuls in twenty-four hours. It is necessary to shake the mixture every time it is given, without which the acid accumulates on the surface, which may cause serious inconvenience.

_Mixture for lotions._—R Med. prussic acid, 2 drachms.
                       Lettuce water, 1 pint.

This mixture in which the dose of acid may be increased to four drachms, is used in external applications upon ulcerated cancers, and for injections in cases of cancer of the uterus.

**Cyanide of Potassium.**—A solution of this article is proposed as a succedaneum of prussic acid. In consequence of the great volatility of the latter, it is not always the same, and therefore leads to different results. On this account it has been thought that the cyanide of potassium might be advantageously substituted for it; the effects of which on the animal economy are always the same.

The process for obtaining the cyanide of potassium is quite easy. It consists in exposing to a heat a long time kept up, the ferrocyanate of potash. Then, the cyanide of iron is completely decomposed, and that of potassium remains untouched. The residue of this strong calcination constitutes a black solid mass, lamellated, which is nothing more than the cyanide of potassium, salted over by the iron and the carbon, while the cyanide of potassium is dissolved, and is transformed into the hydrocyanate of potash.

The action of the cyanide of potassium is similar to that of
prussic acid. When dissolved in eight times its weight of distilled water, it is converted into what Majendie denominates medicinal hydrocyanate of potash. This may be administered in the same doses and in the same preparations as the prussic acid.

The cyanide of zinc, and the cyanide of iodine, are also proposed as remedial agents by Majendie. But the former of these, is in no respect preferable to the cyanide of potassium; and the latter has not been sufficiently examined to ascertain its mode of action.

Solanine.—This alkali was discovered by M. Desfosses, in the berries of *solanum nigrum* (deadly nightshade,) and in the leaves of *solanum dulcamara* (bittersweet.) When pure it occurs in the form of an opaque white powder, sometimes pearled. It is destitute of odour, has a slightly bitter and nauseous taste, is insoluble in cold water and unites with acids, forming with them salts which are uncrystallizable.

When taken in small quantities, solanine produces a strong feeling of irritation in the throat; in larger doses it excited vomiting, which is soon followed by drowsiness and sleep. It may be used in those cases where the extract of nightshade or of bittersweet are indicated.

Two other alkalies are noticed in the Formulary, viz. delphine obtained from *delphiniium staphysagria*, and gentianine, obtained from *gen an luca*. Neither of these, however, appear to possess very marked medicinal powers.

Iodine.—This simple substance, discovered in 1812, is one of the most valuable additions to chemistry, as well as to medicine. It has been found to exist, not only in sea-weed, from which it was first obtained, but also in various mineral waters, particularly such as are sulphurous. It is not improbable, that it will be met with in some of the mineral springs so abundant in our country.

Iodine occurs under the form of small grey scales of feeble tenacity, and having the aspect of plumbago. At the ordi-
nary temperature, it is solid; but at about 350° F., it volatilizes, expanding into beautiful violet vapours.

Iodine combines with oxygen and hydrogen, when these gases are presented to it, in a nascent state; with oxygen, forming iodic acid; with hydrogen, hydriodic acid.

Hydriodic acid may be very conveniently procured by pouring water upon the iodine of phosphorus. The water is decomposed; its oxygen combining with the phosphorus and forming phosphoric acid; its hydrogen uniting with the iodine, and giving rise to hydriodic acid. The liquor is now to be distilled; the first portions are to be rejected, being only water; the last, on the contrary, are pure hydriodic acid. The phosphoric acid which is also formed, remains at the bottom of the retort.

This acid combines with numerous bases and forms neutral salts; of which, those most commonly employed in medicine are, the hydriodates of potassa and soda. They are deliquescent salts, and consequently, very soluble in water. For obtaining them, several methods are detailed in chemical works.

We shall draw from the Formulary, a catalogue of the cases in which iodine has been successfully employed. It was first used as a remedy, by M. Coindet, physician at Geneva, in the treatment of goitre, in which it was attended with marked success. From the observations which have since been so often repeated, in various countries, it results, that we have in iodine an efficacious remedy against a disease which has sometimes shown itself so obstinate. Neither is it in recent cases alone, that we are to expect benefit from this article. It has been known to dissipate old goitres, hard and voluminous; but these, of course, require a longer time.

Iodine has been employed, with equal success, in the treatment of scrofula. M. Baup has cured, by the use of iodine, old scrofulous ulcers, and Majendie asserts, that he has obtained, by this means, the resolution of very considerable glandular enlargements. And from some cases which are related, it would seem that it had some power over scirrhus.
and carcinoma of the uterus, over cancerous affections generally, and also over white swelling.

The efficacy of iodine in phthisis, suppression of the menses, tabes mesenterica, and chronic enlargement of the liver, is not so well established; although the reports in its favour are such as to warrant its trial in these diseases.

We subjoin some formulas for the administration of iodine, proposed by Majendie.

**Tincture of iodine.**  
Rx Alcohol. 1 ounce,  
Iodine, 48 grains.

This tincture should not be prepared long before it is used, because it soon deposits crystals of iodine, and is further likely to decompose the alcohol. It is given to adults in doses of 4 to 6 drops, three times a day, in half a glass of sugar and water; it may be augmented, progressively, up to 20 drops, three times a day.

**Soduretted sulphuric ether.**  
Rx Sulphuric ether, 1 grain,  
Pure iodine, 6 grains.

Thirty drops contain one grain of iodine. The dose should seldom exceed 10 drops.

**Solution of hydriodate of potash.**  
Rx Hydriodate of potash, 36 grains,  
Distilled water, 1 ounce.

These preparations, the mode of administration of which is similar to that of the tincture, are employed like it in the treatment of goitre and scrofula; in the latter case, there is usually associated with it some medical tonic.

**Ointment of hydriodate of potash.**  
Rx Hydriodate of potash, 30 grains,  
Ungt. simplicis, 1½ ounce.

The dose of this ointment, which is used in friction, morning and evening, in goitre and enlarged scrofulous glands, is half a drachm for each time. In about eight days it may be carried to a drachm, and even more, according to the age of the subject and the extent of the tumour.

The *iodine of mercury* has been proposed as a remedy
against syphilis, but its medicinal properties have not been well determined.

Concerning the lupuline of Dr. Ives, which he regards at the same time aromatic, tonic, and narcotic, Majendie remarks: “I have found nothing very precise in this respect. I have made several attempts, both with the lupuline in substance and different preparations of it, upon animals, and have not found it was narcotic. This property, nevertheless, is the easiest to ascertain in experiments upon animals.” p. 153.

The remaining part of the work before us is devoted to the notice of croton oil, piperine, or the active principle of piper nigrum, urea, the oil of euphorbia lathyris, lactucarium, and the salts of gold and platina. With one or two exceptions, these articles are of trifling importance in a medicinal point of view, and as our remarks and extracts have already been drawn out to a considerable extent, we shall not notice them particularly at present. Hereafter, we may have occasion to advert to this subject, with a view of noticing a few other medicinal articles, which have not been introduced into general use.

In conclusion, we recommend the work of Majendie to the attentive perusal of physicians; and we are confident that they will find the greatest benefits in their practice from the judicious employment of many of the new remedies which he has proposed.
Exirpation of the Kidneys, and its consequences.—Professor Mayer, of Bonn, has lately published a memoir on this subject, in which, besides noticing the directions of older writers, he details ten experiments made by himself. The following results are deduced.

1. The death of the animal follows in a short time (from 10 to 13 hours) after the extirpation of both the kidneys.

2. The principal nervous symptoms observed after the operation, are trembling, cries indicative of internal pain, and convulsions immediately preceding death.

3. The pulsation of the heart is diminished one-third, and in some cases one-half. Respiration is also greatly weakened.

4. These symptoms appear to be the result of a metastastic secretion of a liquor analogous to urine.

5. After the extirpation, a serosity, which has all the characters of a urinous liquid, is secreted in the various secreting organs—particularly in the abdominal and thoracic cavities—the pericardium—the ventricles of the brain—the conjunctiva of the eye and the mucous surface of the stomach and intestines. It also appears in the cellular tissue of the liver, lungs, muscles, testicles, &c.

The quantity of this serosity was too small to submit it to chemical analysis.

6. Death seems to be the consequence of a translation to the brain and nervous system, of the urinous liquid which is present in the blood, and is unable to secrete itself in the natural manner.—Bulletin des Sciences Médicales.

Jaundice.—Andral, in one of his late publications, has advanced the idea that this disease is not always owing to the presence of bile in the blood, but in some instances is occasioned by a kind of ecchymosis into
the reticulated texture of the skin. He imagines, that many cases of yellowness in yellow fever, and in children newly born, may be thus explained.—Ibid.

**Splenitis.**—Dr. Krause, of Berlin, has lately published two cases of idiopathic inflammation of the spleen, which deserve attention from the absence of the ordinary symptoms as enumerated by authors. The subject of the first case, was a military officer, of good constitution, and aged 32 years. He was suddenly attacked, and died on the fourth day. The leading symptoms were a derangement of the digestive functions, with a constant nausea and bilious vomitings. A yellow coat on the tongue, incessant thirst, pain in the head, violent periodical delirium, a dry and burning skin, high coloured urine, obstinate constipation, and, in fine, all the symptoms of inflammatory fever. The abdomen was neither hard nor painful, except a distressing tension in the region of the spleen, increased by pressure, and a sense of fulness in the epigastrium. There was severe pain in the chest, unaccompanied with cough, but a sense of oppression obliged him to lie on his back. Lastly, hiccup.

On dissection, the abdominal cavity was found filled with coagulated blood, the spleen was ruptured and its parenchyma black and friable, while the viscera of the thorax and abdomen, together with the brain, were in a healthy state.

The second case was an individual of 40, also of a good constitution. The symptoms were similar, but its event was more happy. He was bled fourteen times in the course of three weeks, and leeches were applied to the region of the spleen. Calomel was exhibited internally and applied externally. At the end of the above period, the patient had an attack of intermittent fever of the tertian type, which yielded to a few grains of sulphate of quinine.

In neither of these cases was there severe pain in the region of the spleen, or in the left shoulder, while the skin and urine were not yellow. —Ibid.

**Goitre.**—Dr. Angelot, in a memoir read before the Royal Academy of Medicine at Paris, states that soldiers stationed in the Alps were generally seized with this disease, but it yielded with great readiness to the application of an ointment of hydriodate of potash.—Ibid.

**Intestinal Calculus.**—Caventou reported to the Academy the case of a female aged 56, who had suffered under constipation during her whole life, and had been four times seized with iliac passion. After much suffering, a calculus was voided, which, on analysis, proved to consist almost entirely of cholestorine. The health of the female rapidly improved after this discharge of a "human bezoar," as the reporter styles it.—Ibid.
Surgery.

Treatise on Bandages and Dressings.—Mr. Gerdy, a French surgeon, has lately published a Treatise on this subject, accompanied with an Atlas of twenty quarto plates. He particularly figures all the different kinds of bandages.

Singular Tendency to union of the Lips.—Dr. Bondi, a German physician, relates a melancholy case of a young person, aged 12, of a scrofulous habit, and debilitated by a sedentary life and poor nourishment. His malady commenced with an ulcer on the gums, which was treated with various remedies. During this, the lips inflamed and ulcerated through their whole extent, and the mouth began to contract. In a short time, its aperture was so small, that an incision was necessary. It however closed again, and this it did repeatedly, without any permanent benefit from various operations. The parts being in a scorbutic state, a healthy cicatrisation could not be effected. The union of the lips was at last so complete, that the head of a pin could barely be passed. An operation was again performed, but a few days thereafter the unhappy patient expired in an asthmatic attack.

Incontinence of Urine.—Dr. Lair communicated to the French Academy of Medicine, three cases of incontinence of urine cured by the immediate and momentary application of tincture of cantharides to the neck of the bladder. The tincture was introduced by means of a sound.

Materia Medica.

Tape Worm.—The following prescription is recommended in Hufeland’s Journal as efficacious in the treatment of this tedious disease.

\[ \begin{align*}
\text{Rx} & \quad \text{Terebinth venet} : \quad \frac{3}{i} \\
& \quad \text{Saponis Jalappini}, \quad \frac{3}{ss} \\
& \quad \text{Ext. Hyoscyam}, \quad \text{grs. iv.} \\
& \quad \text{Calomel}, \quad \text{grs. viii.}
\end{align*} \]

M. form. pilul. pond. grs. ii.

Four of the above pills to be taken every three hours, interposing some simple drinks to aid their operation. Their use may be continued for two or three days. It is added, that Dr. Wilde, of Prague, cured two cases by it, in both of which the worm was expelled on the second day. An instance equally successful has occurred at the Polyclinic Institute of Berlin.

Phosphate of Lead in Consumption.—Many of the German physicians are very partial to acetate of lead in tuberculous consumption. Doctor Hoffman, of Darmstadt, recommends the phosphate as a substitute, and particularly because it does not decompose so readily. He advises a grain
a day, with extract of henbane, and states that he has frequently witnessed its good effects.

Chloruret of Lime in Burns.—Lisfranc has used this remedy with great success in various kinds of burns. In some he applies it immediately after the accident, in others after using emollient cataplasms. Lint, dipped in a solution more or less diluted, is laid over the usual applications of cerate.

OBSTETRICS.

During the last year, a Journal of the Obstetric Art has appeared in Germany, edited by some twenty of the most distinguished accoucheurs, residing in the various principal cities. We will only mention the names of Osiander, Carus, Nebel, Naegle, and De Frereip. From an analysis of the first number published in the Bulletin, we extract the following.

Poisoning of a pregnant female with Opium. (By Professor Outrepont.)—This female took voluntarily seven or eight ounces of opium in substance. Her life was however saved. Delivery followed in three days thereafter. The child, whose skin was of a bluish black color, died shortly after birth, in a convulsive fit. The mother gradually recovered her health, though her mental faculties were for a length of time enfeebled.

Remarkable Precocity. (By the same.)—A female child at birth was twenty-three inches long, and weighed two and a half pounds more than an ordinary infant. Four teeth appeared on the thirteenth day. During the seventh month it refused to take any more nourishment from the breast of the mother. In the ninth month, the menses appeared, preceded by diarrhoea and colic, and hair was seen on the pubes. She had now eight teeth, and long brown hair, and her height was that of a girl three years old. At fourteen months, four dog teeth appeared, and at the nineteenth month, she measured two feet six inches, and weighed fifty-five-four (Vienna) pounds. Her strength was in proportion, and her temper very irritable. The breasts developed at nine years, and her height then was four feet. There was no appearance of "genital instinct," but at eleven years, she became serious. Her height continued increasing. At the age of twelve years and two months she died of an attack of military fever.

Delivery effected by Gastrotomy.—This case is related by Dr. Schenck, of Siegen. The female had some time previous undergone the Caesarian Operation with success. During the present labour, a rupture of the uterus occurred at the cicatrix left by the operation. Gastrotomy was not performed until the second day thereafter, nor until all the symptoms indicated the presence of the fetus in the abdominal cavity. It was found dead and extracted. The wound healed kindly, and in a month the female was deemed cured.
Practice of Midwifery in Japan.—Dr. Siebold, at Nangasacki, in Japan, states that it is a very common practice in that country to use frequent friction along the lower part of the abdomen of pregnant females. The native practitioners have rendered this popular, from an idea that it will cause an easy delivery.

CHEMISTRY.

Test of Nitric Acid.—Dr. Liebig proposes the following process for detecting the presence of nitric acid. The fluid to be examined is to be mixed with as much sulphate of indigo as will give it a distinct blue colour, and after adding a few drops of sulphuric acid, the mixture is to be boiled.

If the fluid contains a nitrate, the blue colour will be discharged, or only rendered yellow if the quantity of nitrate is very minute. Dr. Liebig states, that by this process nitric acid may be detected when there is not more than a four-hundredth of it present; by adding a little common salt to the fluid before applying the heat, even a five-hundredth of nitric acid may be readily detected.—Ann. de Chimie, xxxv. 80.

[The experiments of Sir Humphry Davy rendered it probable that Alumina was a metallic oxide; but its base Aluminum, has not to our knowledge, been hitherto obtained in such a state as to make its properties an object of investigation. The following article will, therefore, be highly interesting to our chemical readers.—Edit. N. Y. Med. & Phys. Jour.]

Metal of Alumina.—M. Oersted is stated to have obtained the metal of alumina by employing the chloride of that earth. Pure alumina is heated to redness, and then intimately mixed with powdered charcoal; the mixture is introduced into a porcelain tube, and after heating to redness, dry chlorine gas is passed over it. The charcoal reduces the alumina, the metal combines with the chlorine, and the oxide of carbon is also formed. The chloride of aluminum is soft, crystalline, and evaporates at a little above the temperature of boiling water; it readily attracts moisture from the air, and becomes hot when water is added to it. By mixing with an amalgam of potassium, containing much of the latter, and immediately heating the mixture, chloride of potassium is formed, and the metal of alumina combines with the mercury. The amalgam quickly oxidizes by exposure to the air. Being subjected to distillation out of contact of air, the mercury is volatilized, and a metallic button is left, which has the colour and splendour of tin. M. Oersted has ascertained many properties belonging to the new metal and its amalgam, which he promises to publish speedily.—Hensman's Repertoire de Chimie, &c.

Cynopia, a new Vegetable Alkali.—Professor Ficinus, of Dresden, has discovered a new alkali in the Aethusa Cynapium Linn. (Fool's parsley) to which he has given the name of Cynopia. It is crystallizable, and soluble
in water and alcohol, but not in ether. The crystals are in the form of a rhombic prism, which is also that of the crystals of the sulphate.—Hensman's Repertoire.

[The above is announced in the November Number of the London Philosophical Magazine, as a new alkali in hemlock. This common name, however, is generally applied, in this country, to two other plants, viz. Cicutæ maculata, Linn. and Conium maculatum, L. We mention this as another proof of the necessity of calling plants by their scientific instead of their common names.—Edit. of N. Y. Med. & Phys. Jour.]

Dracine.—A new substance found in Dragon's Blood.—M. Melandri finds that the colouring matter of dragon's blood is soluble in alcohol and oil, and also in hot water, but in small proportion: the aqueous solution is bitter, astringent, and of a fine purple colour; by cooling it becomes opaque and red. By the tests of gelatine and sulphate of iron, it does not appear to contain either tannin or gallic acid.

A portion of dragon's blood was dissolved in strong alcohol, the solution was evaporated until it was much concentrated, and then poured into cold water, but in which a spongy mass was precipitated; this, after being washed with cold water was saturated with water containing one-hundredth of sulphuric acid, and at about 61 deg. Fahl. chemical action appeared to occur. The sediment being well washed with water, was of a fine red colour, varying according to the state of aggregation; it was tasteless and inodorous, flexible, and became fluid at 131 deg. Fahl. This substance, called by the discoverer Dracine, has some analogy with the vegetable alkalis, although its affinity for acids is but slight. The sulphate is obtainable by adding sulphuric acid diluted with alcohol to an alcoholic solution of dracine, precipitating the mixture by cold water, and then applying a little heat; the sulphate of dracine collects at the bottom, and is to be washed with cold water until litmus paper ceases to be reddened by the washings; it is then to be dissolved in hot water. The solution is reddened by the smallest quantity of alkalis, and may be used as a very sensible test of their presence. Dracine is also a good test for acids, being rendered yellow by them. The smallest quantity of carbonate of lime in filtering paper may be detected by sulphate of dracine, the yellow solution instantly becoming red by its action.—Bulletin Univ. c. xi. p. 157.

At the sitting of the Royal Academy of Sciences of Paris, June 11th, 1827—a prize of 10,000 francs was adjudged to MM. Pelletier and Caventou, for the discovery of the sulphate of quinine. Another of the same amount to M. Civiale, as being the first who had practised the breaking of the calculus in the living subject, and who had operated with success upon many persons. This prize was founded by M. de Montyon, "to those who have improved the healing art."
On the Taste of Arsenic.—At the trial of Mrs. Smith for poisoning her servant, held in the Justiciary Court here in February last, the professional gentlemen who were examined, differed as to the taste of arsenic. It is singular, that a difference of opinion should exist on a fact of so much importance and apparently so easy to settle: yet this is not the first occasion on which scientific men have differed regarding it. On referring to systematic authors, in Chemistry and Medical Jurisprudence, it will be found, that arsenic is invariably said to have an acrid taste. But it is well known, that systematic writers are too apt, especially on points apparently simple and trivial, to quote from one another, without personal experiment. And accordingly, when a reference is made to such medico-legal authors as have written especially on arsenic, or to the evidence of persons who have taken it when administered with articles of food, we find that some say the taste is sweetish, others that it is first sweetish and then acrid, others that it is sweetish and acid, and others that it has no taste at all. The natural inference is, that the taste, whatever it actually is, must be weak; so that, in fact, the poison may be swallowed without any taste being perceived. We have been informed by Dr. Christison, Professor of Medical Jurisprudence in this University, that, in reference to the evidence of Mrs. Smith’s trial, he has recently made some experiments on the subject, and that others have been made, at his request, by Dr. Duncan, jun. and Dr. Turner and other two gentlemen, and the following is the general result.—The quantity of the solid poison tasted, from two to four grains; and the duration of the tasting from half a minute to a minute and a half. Two only thought they perceived, towards the close, a very faint sweetish taste; the rest declared the powder to be tasteless. As to the solution, its taste appeared to most to be very faintly sweetish. What may be its taste, when allowed to pass to the root of the tongue, it is not easy to determine, as the experiment made with sufficient quantity would be unsafe. But it has certainly been swallowed without the person remarking any particular taste at the time; and the most common account has been that it tasted sweetish. The particulars may be seen in a paper in the Edinburgh Medical and Surgical Journal for this quarter.—Jameson’s Edinburgh New Philos. Jour. for June 1827.

MEDICAL JURISPRUDENCE.

On the Detection of Antimony in Mixed Fluids. By Edward Turner, M. D. F. R. S. E. Fellow of the Royal College of Physicians, and Lecturer on Chemistry, Edinburgh.—Having been recently engaged, along with Dr. Christison, in examining some food supposed to contain tartar emetic, I was led to inquire into the comparative value of the tests recommended for detecting that substance; and as, on perusing the investigation, I found reason to distrust the method described in our best works on toxicology, and at the same time succeeded in rendering it more secure, I am induced to believe that a short account of my experiments will not be unacceptable to the public.
Many re-agents decompose tartar emetic, and cause precipitates in its solution. Of these the principal are alkaline substances, the stronger acids, such as the muriatic and sulphuric, the infusion of gall-nuts, and sulphuretted hydrogen. The value of these tests is very unequal. Pure potash, when cautiously added to a strong solution of tartar emetic, occasions a pretty copious flocculent white precipitate, which is readily and completely re-dissolved by an excess of the alkali. In a moderately dilute solution potash does not produce any change. Pure ammonia in a concentrated solution throws down a white, very fine, granular precipitate, which adheres firmly to the glass, and is only partially re-dissolved by an excess of the precipitant. Tartar emetic is not precipitated by carbonate of ammonia. The fixed alkaline carbonates and lime-water act with considerable delicacy. In a solution containing a grain of tartar emetic to an ounce of distilled water, carbonate of potash and lime water yield distinct white precipitates, that from the former being the protoxide of antimony with a little carbonic acid, and that from the latter consisting of the tartrates of antimony and lime; whereas in the same liquid pure potash produces no change, and ammonia a cloudiness scarcely visible. When the tartar emetic is in the proportion of one grain to two ounces of water, lime-water has no effect, but the carbonate of potash still gives rise to a precipitate. If the proportion is a grain to four ounces of water, the action of the alkali can no longer be traced.

The delicacy of muriatic or sulphuric acid as a test of tartar emetic, is almost exactly the same as that of the carbonate of potash; but the acid must be added cautiously, as an excess of it re-dissolves the precipitate.

The recent infusion of gall-nuts produces a copious yellowish white precipitate in a concentrated solution of tartar emetic. The liquid is rendered turbid, when the proportion is two grains to an ounce; but it undergoes no change when the tartar emetic is in the ratio of one grain to an ounce of water.

Sulphuretted hydrogen acts with far greater delicacy and certainty than any of the others. On transmitting this gas through eight ounces of water containing one grain of tartar emetic, the solution instantly acquired an orange colour; and after saturating the liquid with the gas, and boiling in order to expel the excess of it, a considerable quantity of the sulphuret of antimony quickly separated.*

From these experiments it fully appears, that of all the tests of tartar emetic enumerated by toxicologists, sulphuretted hydrogen is the only one which is sufficiently delicate for being entitled to confidence. It is the only one, also, the indications of which as to the presence of antimony are

* This precipitate is commonly, but I conceive incorrectly, regarded as a hydrated sulphuret of the oxide of antimony. It appears rather to be a hydrated sulphuret of the metal.
precise. The orange tint of the precipitated sulphuret of antimony can scarcely be mistaken for any other metallic sulphuret by a person acquaint-
ed with its appearance. Its colour is quite different from that of orpiment or of the bisulphuret of tin; and from the sulphuret of cadmium, to which it bears a great resemblance, it is distinguished by its ready solubility in a solution of pure potash. On the contrary, the other tests, taken singly, supply no proof whatever of the presence of tartar emetic; though, when they all agree in their indications, their evidence is not likely to be deceptive.

In describing sulphuretted hydrogen as a test of tartar emetic, it is almost unnecessary to state that this gas merely indicates the presence of antimony, without directly showing in what state it existed. But since tartar emetic is the only pharmaceutic preparation of antimony which is soluble in water, the detection of the metal itself, in judicial cases, leaves little doubt of its having been in the form of the double tartrate. This, however, is not a point of much importance, because all soluble antimonials are poisonous.

In order to ascertain if sulphuretted hydrogen may be relied on for discovering the presence of antimony in complex animal and vegetable fluids, tartar emetic, dissolved in water, was mixed with tea, broth, porter, and milk, in such quantity that each solution amounted to four ounces, and contained two grains of the compound. Through these solutions, after being acidulated with tartaric acid, boiled and filtered, a current of sul-
phuretted hydrogen gas was transmitted during fifteen or twenty minutes. In the three first liquids an abundant precipitation ensued immediately; and the same took place in the milk after boiling. The precipitate subsided easily from each, and the colour of that from the tea, broth, and milk, was quite characteristic. That procured from the porter was not so satisfac-
tory at first; but on collecting and drying it upon a filter, the paper pre-
sented the distinct orange tint of the precipitated sulphuret of antimony.

In recommending the use of tartaric acid, I may observe that the em-
ployment of this substance should in no cases be omitted. According to my observation, all the precipitates occasioned in tartar emetic by re-
agents, sulphuretted hydrogen excepted, as well as by animal or vegetable fluids, are readily dissolved by tartaric acid. Thus the precipitates occa-
sioned by lime-water, or muriatic acid, disappear instantly on the addition of tartaric acid; and the compound of tannin and the oxide of antimony, whether formed by the infusion of gall-nuts, tea, or cinchona bark, may easily be rendered soluble by the same means. If milk is present, muriatic acid should likewise be employed, by which the coagulation of the caseous matter is more completely effected. In order, therefore, to form a rule applicable to every case, the following directions may be given: The fluid supposed to contain tartar emetic should be mixed with a drachm or two of muriatic and tartaric acids, boiled for a few minutes to separate any substance coagulable by heat, and then allowed to cool, and filtered. The liquid should next be exposed to the action of sulphuretted hydrogen, and
boiled to expel the excess of the gas; after which the sulphuret will sub-
side if tartar emetic had been present.

After procuring the sulphuret of antimony by the process above de-
scribed, it is important to subject the compound to some operation by which
the metal may be obtained in a separate state. Professor Orfila, in his
work on Toxicology, (Vol. i. p. 465, third edition) states, that the precipi-
tate in question, "dried on a filter, and mixed with charcoal and the potash
of commerce, gives a button of metallic antimony by the action of heat.
This reduction of the oxide of antimony by charcoal may be made in an
earthen crucible, and is completed in the space of about ten or twelve
minutes." It is chiefly to this part of the process for detecting antimony
that I have found reason to object. I do not, indeed, deny that the process
will succeed perfectly, when a considerable quantity of the materials is
employed; but in operating on such quantities as are likely to be met
with in medico-legal investigations, my attempts to procure the metal in
this way have proved completely fruitless. Thus, four grains of the sul-
phuret, precipitated from tartar emetic by sulphuretted hydrogen, and well
dried, were mixed with an equal weight of charcoal and dry carbonate of
potash. The mixture, protected on all sides by charcoal, was placed in a
Hessian crucible, carefully luted, and was then exposed to heat during
fifteen minutes. The experiment was twice repeated; and on one occa-
sion a full red, and on the other a commencing white heat was employed,
but in neither case could I perceive any trace of the metal. On examining
the residue chemically, I found that some particles of metallic antimony
were diffused through the mass, though they could not be discovered by the
eye; while another portion still remained as sulphuret, and was dissolved
by the potash on the addition of water. These experiments were varied by
mixing the sulphuret with black flux, and heating the mixture in a glass
tube by means of a spirit lamp; but a metallic globule was not procured,
though the heat was augmented by aid of the blowpipe. It is worthy of
remark, that in none of these trials was there any appearance of a metallic
sublimate; so that, were colour insufficient for distinguishing orpiment
from the sulphuret of antimony, the black flux would afford an easy mode
of distinction.

Having failed in my attempts to procure the metal by the preceding pro-
cess, I had recourse to another which proved successful. It is founded on the
property hydrogen is known to possess, of separating sulphur from antimony
at an elevated temperature,—a property, of which advantage has been
taken for the purposes of analysis. In performing this operation, the dry
sulphuret is placed in the middle of a glass tube about three inches long,
and a quarter of an inch in diameter. One end of the tube is connected
by means of a cork with a vessel, from which hydrogen gas is evolved;
and to its other extremity is adapted a bent tube, which opens under water,
so as to conduct away the hydrogen, and at the same time exclude atmo-
spheric air. After the air within the apparatus has been expelled, heat is
applied by means of a spirit lamp to the part of the tube on which the sul-
phuret is placed. The decomposition of the sulphuret commences at a temperature by no means elevated; but in order to render it complete and fuse the antimony, the glass should be made red hot, and kept in that state for five or six minutes. The temperature at the close of the process may with advantage be increased to bright redness by the use of the blowpipe.

The appearance of the metal within the tube depends upon the manner of conducting the experiment. If the sulphuret had been placed in a heap, the metal is found partly in a spongy state, and partly in minute globules; but if it had been diffused over a considerable space, no globules appear, and the metallic lustre is indistinct. The metallic nature of the spongy mass, may, in general, be brought distinctly into view by placing it on a piece of white paper, and pressing it with the nail or the blade of a penknife.

The result also depends on the velocity with which the hydrogen is transmitted through the tube. If the gas passes rapidly, some of the metal is hurried off at the moment of separation from the sulphur, and is deposited within the tube as a metallic film, which is sometimes very distinct. If, on the contrary, the passage of the gas is slow, this appearance does not take place.

By means of this process, I have succeeded in procuring from the tenth of a grain of the sulphuret metallic antimony, the lustre of which could be distinctly seen with the assistance of a lens. From half of the precipitates procured from the mixture of two grains of tartar emetic with broth and milk, I procured distinct metallic globules.

Should a considerable quantity of animal or vegetable matter subside with the sulphuret, the metallic antimony will then be so mixed with charcoal that its lustre cannot be seen distinctly. This occurred to me in decomposing the sulphuret obtained from porter. In a case of this kind the mixture should be placed in an open tube, and heated to redness by means of a spirit lamp. The antimony is then oxidized, and the oxide, which attaches itself to the cool parts of the tube in form of a white powder, may be recognised by its appearance and volatility. — Edin. Med. and Surg. Journ.

MISCELLANEOUS.

Diseases of Pavia.—Dr. Hildebrand has lately published "Annals of the School of Clinical Medicine of Pavia." It is preceded by historical sketches. The scientific institutions of this city were founded by Charles le-debonnaire, the Emperor Charles IV. the Empress Maria Theresa and her son Joseph.

Intermittent Fevers of the tertian type are very frequent. The humid atmosphere and marshy grounds sufficiently account for their occurrence. Bilious affections a common accompaniment. Indeed, diseases of the liver are stated by Dr. Hildebrand to be among the most common diseases. Dropsies also prevail. On the other hand, consumption is very rare, and
nervous diseases are seldom seen. The mortality in the "clinique" of Pavia during nine months, was in the proportion of 9 in 100.—Bulletin des Sciences Medicales.

State of Medicine in Norway.—This country never had an independent scientific institution until the year 1811, when the King of Denmark founded the University of Christiana. Its faculty of medicine, (three professors) commenced their labours in 1814. To these has lately been added Professor Holst, who has written on Radasyge, a disease of Northern Europe, and also on the prisons of England. A civil, as well as a military hospital are attached to the institution. Examinations are required previous to the student commencing the study of medicine, and the other liberal professions, and two additional ones before they take the Degree of Doctors of Medicine.—Ibid.

Deaf and Dumb in the Canton De Vaud, (Switzerland.)—By a very late enumeration, the following results have been obtained:

<table>
<thead>
<tr>
<th>District</th>
<th>No. of Deaf &amp; Dumb</th>
<th>No. of Inhabitants</th>
</tr>
</thead>
<tbody>
<tr>
<td>District of Meudon</td>
<td>43</td>
<td>6602</td>
</tr>
<tr>
<td>Payerne</td>
<td>25</td>
<td>6095</td>
</tr>
<tr>
<td>Aubonne</td>
<td>20</td>
<td>6683</td>
</tr>
<tr>
<td>La Vallee</td>
<td>12</td>
<td>3933</td>
</tr>
<tr>
<td>Remainder of the Canton</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>152</strong></td>
</tr>
</tbody>
</table>

Of the whole number, sixty-six thirty boys and thirty-six girls) are in a state to receive instruction; seventy, (forty males and thirty females) either from age, disease, or imbecility, verging on cretenism, are incapable of receiving instruction, while sixteen (seven males and nine females) are in an intermediate state between the two. The success of education with them is doubtful. The first class are placed in the institution of M. Naeff, at Yverdun.—Ibid.

Inefficacy of Belladonna as a preservative against Scarlatina.—Doctor Lehmann relates, that in 1825 an epidemic Scarlet Fever raged at Torgau, which was highly fatal. One in eight, of those seized, died. Belladonna, of the best quality, was punctually administered in several families where the disease raged, but with no beneficial result. The disease was as severe with those who took it, as those who omitted it.—Ibid.

Hoven Cattle.—The gas found in cattle who have become swelled from eating green food, has generally been deemed carbonic acid. Mr. Plu-ger, of Soleure, in Switzerland, has recently analyzed some freshly taken from an animal. He found it to consist of carbonic acid gas three-fifths, and gaseous oxide of carbon two-fifths. This is the first instance in which the latter has been found as a natural product.—Ibid.
UNIVERSITY REGISTER.

Under this title, as announced in our last, we propose giving a succinct History of what has been done by the constituted authorities of this state for the promotion of Medical Learning. We intend to comprise in it, a history of the men and things that have agitated our professional community for the last thirty years, and we shall do this, in all cases, with the aid of authentic documents. No assertion shall be made that cannot be substantiated by written or oral proofs; and we flatter ourselves, that the statements with which the public have for years been surfeited in pamphlets, "historical sketches," "guides," and "pictures," will find their true level, and be awarded to their single author. Our first number must necessarily be tedious, but its insertion is indispensable, in order to understand the organization of the Board of Regents of the University.

In a very short time, after the completion of the war of independence, the attention of the Legislature of the state of New-York, was directed to the promotion of the great cause of learning and science. An act was passed on the 1st May, 1784, with the following title—

"An Act granting certain privileges to the College, heretofore called King's College; for altering the name and charter thereof, and erecting an University within this State."

This law recites, that by letters patent under the great seal of the late colony of New-York, bearing date Oct. 31st, in the 28th year of George II. King of Great Britain, a certain body politic and corporate was created, by the name of the College of the province of New-York, in the city of New-York, with divers privileges and immunities. It adds, that there are many vacancies in the said corporation, in consequence of the death or absence of a great number of the Governors of the College, "whereby the succession is so greatly broken in upon, as to require the interference of the Legislature." And as the remaining governors, desirous to render the same extensively useful, have prayed that the said College may be erected into an University, and that such other alterations may be made in the charter, or letters of incorporation, as may render them more conformable to the liberal principles of the constitution of this state. It enacts as follows—

1st Section. That all the rights, privileges, and immunities, heretofore vested in the above College, so far as they relate to the capacity of holding or disposing of property, either real or personal, of suing, or being sued, of making laws or ordinances for their own government, or that of their servants, pupils, or other individuals under their care and subject to their direction; of appointing, displacing, and paying stewarts and other inferior servants; of making and holding a common seal and altering the
same at pleasure, are hereby vested in the Regents of the University of the State of New-York, who are hereby created into a corporation or body corporate and politic. The said Regents are to consist of the following persons—

The Governor of the State, The Lieutenant Governor, The President of the Senate, The Speaker of the Assembly, The Mayor of the city of New-York, The Mayor of the city of Albany, The Attorney General, The Secretary of State, all for the time being and by virtue of their respective offices. Also,

Henry Brockhosiit Livingston, Robert Harpur, of the city of New-York.
Walter Livingston, Christopher Yates, county of Albany.
Anthony Hoffman, Cornelius Humfrey, county of Dutchess.
Lewis Morris, Philip Pell, jun. county of West-Chester.
Henry Wisner, John Haring, county of Orange.
Christopher Tappen, James Clinton, county of Orange.
Christopher P. Yates, James Livingston, county of Montgomery.
Abraham Bancker, John C. Dougan, county of Richmond.
Matthew Clarkson, Rutgers Van Brunt, county of Kings.
James Townsend, Thomas Lawrence, county of Queens.
Ezra L'Hommedieu, Caleb Smith, county of Suffolk.
John Williams, John McCrea, county of Washington.

It is also enacted, that the Clergy of the respective religious denominations in this state, may direct at such time and place as they may deem proper, after the passage of this act, and being so met, shall by a majority of voices present, choose and appoint one of their body to be a regent of the said University, and in case of his death or resignation, to choose and appoint another in the same manner; and the regent so chosen, shall have the like powers as any regent appointed or to be appointed by virtue of this act: And to the end that a succession of regents be perpetually kept up—

2nd Section. Whenever any regent not ex-officio, shall remove from the state, or shall resign or die, the Governor, with the advice and consent of the Council of Appointment, shall fill said vacancy, so that such appointments be of persons resident in the counties respectively wherein the former regents resided.

3d Section. The Regents are directed to choose a Chancellor, Vice-Chancellor, Treasurer, and Secretary, from among the said Regents. The Chancellor, or in his absence, the Vice-Chancellor to preside at all meetings, and to have the casting vote.

4th Section. The Regents, or a majority of them, are vested with full power to make ordinances and by-laws for the government of the several Colleges, which may compose the said University, and for the management of such estate as they may be invested with. They have also full power to determine the salaries of the officers and servants of the said College, and to remove from office any such president, professor, tutor,
fellow, or servant, as they conceive, after a full hearing, to have abused their trust, or to be incompetent thereto. Provided, however, that no fine to be levied shall exceed the value of one bushel of wheat, for any one offence, and that no pupil or student shall be suspended for a longer term than twenty days, or be rusticated or expelled but upon a full hearing by the Chancellor or Vice-Chancellor, and at least ten Regents, not being president or professors of the College to which the person accused belongs. The Regents are also directed to choose a president and professors for King's College, but are forbidden to demand any test oath from them, and no professor is to be accounted ineligible on account of any religious tenets he may profess.

5th Section. The estate formerly held by the corporation of King's College is to be held by the Regents for the use of the College, and the Regents are empowered to hold estate to the amount of £3500 per annum, for the use of said College.

6th Section. The Regents are empowered to hold real and personal estate to the annual amount of 40,000 bushels of wheat.

7th Section. Said Regents are empowered to found Schools and Colleges in any such part of the state, as may seem expedient to them, and to endow the same, vesting such Colleges with full and ample powers to confer the degrees of Bachelor of Arts, and directing the manner in which such Colleges are to be governed; "always reserving to the Chancellor or Vice-Chancellor of the University and a certain number of the Regents to be appointed by a majority of the said Regents, a right to visit and examine into the state of literature in such College, and to report to the Regents at large any deficiency in the laws of such College, or neglect in the execution thereof; every such School or College to be deemed a part of the University, and as such subject to the control and direction of the said Regents." Any School or College founded by any person or persons or body corporate, and endowed with an estate of the annual value of one thousand bushels of wheat, may, on application of the founder or founders, be considered as part of the said University, and the founders, or the body corporate and their heirs or successors may, for ever thereafter, send a representative for such College or School, who is to be considered as a Regent of the University. The President (if it be a College) is also to be a Regent.

8th Section. Whenever any religious body or society of men shall deem it proper to institute a professorship in the said University for the promotion of their particular tenets, or for any purpose not inconsistent with religion, morality, and the laws of the state, and shall appropriate a fund of not less than two hundred bushels of wheat per annum, the Regents shall so appropriate it, and the professors so to be appointed shall be subject to the like rules and ordinances as the other professors of the University, and entitled to the like immunities and privileges.

9th Section. "The Regents and their successors shall have full power
and authority by the Chancellor or Vice-Chancellor of the University, or any other person or persons by them authorized or appointed, to give and grant to any of the students of the said University, or to any person or persons thought worthy thereof, all such degrees as well in divinity, philosophy, civil and municipal laws, as in every other art, science, and faculty whatsoever, as are or may be conferred by all or any of the Universities in Europe." The Chancellor or Vice-Chancellor to sign all diplomas or certificates of such degrees, "other than the degree of Bachelor of Arts, which shall and may be granted by the President of the College in which the person taking the same shall have been graduated, and the diplomas shall be signed by the President." The persons to be elected fellows, professors, or tutors, as directed in a previous section, to be also Regents of the University ex-officio, and capable of voting in every case relative only to the respective Colleges to which they shall belong, except in such cases wherein they shall respectively be personally concerned or interested.

10th Section. The College in the city of New-York, heretofore called King's College, shall for ever hereafter be known by the name of Columbia College.

It does not appear that any proceedings were held under this act, as during the next session of the Legislature another was passed, enlarging the board. The title is as follows—

An Act to amend an act, entitled an act for granting certain privileges to the College, heretofore called King's College, for altering the name and charter thereof, and erecting an University within this State.

Passed November 26, 1784.

In the recital it is stated, that whereas it is represented to the Legislature, that from the dispersed residences of many of the Regents of the University, and the largeness of the quorum who are made capable of business, the interest and prosperity of the said University have been greatly obstructed; and it also represented that certain doubts have arisen in the construction of the act given above—Therefore for remedy, it is provided in the

Sect. 1. That in addition to the Regents appointed by the above act the following are constituted Regents of the University—John Jay, Samuel Provost, John H. Livingston, John Rodgers, John Mason, John Ga- noe, John Daniel Gros, Johan Ch. Kunze, Joseph Delaplaine, Gershom Seixas, Alexander Hamilton, John Lawrence, John Rutherford, Morgan Lewis, Leonard Lispensard, John Cochran, Charles McNight, Thomas Jones, Malachi Treat, and Nicholas Romaine, of New-York; Peter W. Yates, Mathew Visscher, and Hunlock Woodruff, of Albany; George J. L. Doll, of Ulster; John Vanderbilt, of Kings; Thomas Romaine, of Montgomery; Samuel Buel, of Suffolk; Gilbert Livingston, of Dutchess; Nathan Kerr, of Orange; Ebenezer Lockwood, of West-Chester; John
Lloyd, Jun., of Queens; Hermanus Garrison, of Richmond; and Ebenezer Russel, of Washington.

Sect. 2. The Chancellor, or in his absence the Vice-Chancellor, or in the absence of both, the Regent next nominated in the act of May 1784, with any eight or more of the Regents, are to be a quorum, whose acts and proceedings shall be as valid as if all the members were actually present. To constitute a legal meeting, however, a notice by the Chancellor or the other persons alternatively named, shall be published for at least two weeks in one of the public newspapers.

Sect. 3. This orders an annual meeting of the Regents, at the time and place where the Legislature shall first be convened, after the first Monday in July in each year.

Sect. 4. The Clergy of each respective religious denomination in this state may meet, and by a majority of voices elect one of each of their respective bodies to be a Regent of the University, and in case of death or resignation, to elect successors, in the same manner, and every Regent so elected to have equal powers with any appointed by these acts.

Sect. 5. This appoints the time for the first meeting of the Regents.

Sect. 6. The Treasurer of the State is directed to advance to the Treasurer of the University for the use of Columbia College, the sum of £2,552.*

Whether an organization of the Board of Regents took place under this would seem doubtful. At all events we have not been able to obtain access to any records detailing their proceedings. And in less than two years another act was passed, repealing both those which we have noticed. This it will be observed, is in every material part, the same law which is now in force. It is entitled—

An Act to establish an University within this State, and for other purposes therein mentioned. Passed April 13, 1827.

It recites that from the representation of the Regents, there are defects in the existing law, which require alterations and amendment, and as a number of acts on the same subject, altering, amending, and correcting former ones, tends to render the same less intelligible and easy to be understood, therefore it is deemed expedient to present the Constitution of the University in a single law, and to repeal all former ones on that subject.

Sect. 1. Declares that an University is instituted within this state, by the name of "The Regents of the University of the State of New-York." Said Regents to be always twenty-one in number, and of which the Governor and Lieutenant-governor, by virtue of their offices, shall always be two. The following persons are appointed Regents—

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* The above acts are copied from Holt's edition of the Session Laws of the State of New-York.

The Regents are to continue in place during the pleasure of the Legislature. All vacancies to be supplied by the Legislature, in the manner in which delegates to Congress are chosen. The Regents are to convene at such time and place as the Governor shall appoint, and choose by ballot a Chancellor and Vice-Chancellor, to continue in office during the pleasure of the Regents. All meetings after the first to be held at the appointment of the Chancellor, or in his absence the Vice-Chancellor, or of both, of the Senior Regent present in the state. A meeting of the Regents is also to be called whenever three Regents desire it in writing—such call to be published in one or more of the newspapers in the city of New-York, at least ten days prior to such meeting. Eight Regents to constitute a quorum, and the Regents are empowered to hold property to the annual amount of forty thousand bushels of wheat.

Sect. 2. The Regents are to appoint by ballot a Secretary and Treasurer, who shall hold their offices during pleasure.

Sect. 3. The Regents are authorized and required to visit and inspect all the Colleges, Academies, and Schools which are or may be established in this state, and to make a yearly report thereof to the Legislature. (The remainder relates to their power of appointing presidents and principals when the trustees of Colleges or Academies shall leave their situations vacant for a year.)

Sect. 4. The Regents shall have the right of conferring by diplomas under their common seal, on any person or persons whom they may think worthy thereof, all such degree or degrees, above or beyond those of Bachelor or Master of Arts, as are known to and usually granted by any University or College in Europe.

Sect. 5. The Regents may apply (except in cases of special grants to them) their funds in such manner as they may deem most conducive to the promotion of literature, and the advancement of useful knowledge within this state.

Sect. 6. The Regents shall meet annually on the second Thursday next after the Senate and Assembly, at the annual session of the Legislature shall have formed a quorum respectively, and at the Assembly chamber immediately after the Assembly shall have adjourned. They may adjourn from time to time, not exceeding ten days at any one time.

Sect. 7. When any citizens or bodies corporate are desirous of founding a College, they shall make known in writing to the Regents, "the place where, the plan on which, and the funds with which it is intended to found and provide the same, and who are proposed for the first Trustees; and if the Regents shall approve thereof, they shall declare their approba-
tion under their common seal, and allow a convenient time for completing the same." If at the expiration of the said time, the Regents are satisfied that said plan is fully executed, they shall declare the said College incorporated, with such trustees as they shall name, not exceeding twenty-four, nor less than ten, and shall have perpetual succession, and enjoy all the corporate rights and privileges enjoyed by Columbia College, herein after mentioned.

Sect. 8. Confirms the charter granted to (now) Columbia College on the 31st October, 1754,* except, that the title is altered to Columbia College, and that no persons are to be trustees in virtue of any offices, characters, or descriptions whatever—excepting also, such clauses thereof as require the taking of oaths and subscribing the declaration therein mentioned, and which render a person ineligible to the office of president on account of his religious tenets, and prescribe a form of public prayer to be used in said College—also, excepting the clause which provides that the by-laws and ordinances to be made in pursuance thereof, should not be repugnant to the laws and statutes of that part of the Kingdom of Great Britain called England—except also, that in all cases where fifteen governors are required to constitute a quorum for the despatch of business, thirteen trustees shall be sufficient. Provided always, that the by-laws and ordinances to be made by the trustees of the said Columbia College, shall not be contrary to the constitution and laws of this state.

Sect. 9. Appoints twenty-nine persons to be Trustees of Columbia College; but directs that whenever the number is reduced to twenty-four, then said twenty-four are constituted Trustees in perpetual succession.

Sect. 10. Vests the powers, rights, and estates of Columbia College in the Trustees.

The remaining sections up to Sect. 20, do not require notice. They relate to the incorporation and government of Academies.

Sect. 20. No trustee, president, principal, tutor, or fellow of any College or Academy, shall be a Regent of the University.

Sect. 21. Whenever any person, now or hereafter, a trustee of any College or Academy, shall be appointed a Regent of the University, or when a Regent is elected a trustee, he shall elect in which of said places he will serve, and give written notice of the same.

Sect. 22. Repeals the acts of May and November, 1784.†

Under this act the present Board of Regents of the University was organized. The first meeting was held by appointment of his excellency George Clinton, governor of the state, at the Exchange, in the city of New-York, on the 17th of July 1787, and the following Regents were present—

* We shall give a copy of this Charter in a future Number.
George Clinton, Governor; John Rodgers, Egbert Benson, John Jay, Benjamin Moore, William Linn, Frederick William De Steuben.

Governor Clinton was elected Chancellor; John Jay, Vice-Chancellor; and Richard Harrison, Secretary.

At the winter session, several Academies were incorporated, and an annual report was presented to the Legislature. Proofs of their assiduous efforts to promote the cause of literature are manifest on every page of their early minutes. Nothing, however, relative to Medical Education, appears until the 13th of January, 1791; when the following entry is found—

"A Memorial of Nicholas Romayne relative to a Medical School, was read and committed to Dr. Moore, General Clarkson, and Dr. Rodgers."

As this Memorial in its consequences, led to the establishment of the present College of Physicians and Surgeons of New-York, we shall in our next give a detailed account of the proceedings relative to it.

[To be continued.]

QUARTERLY BIBLIOGRAPHICAL NOTICES.


A useful compilation for students.


3. The Western Medical and Physical Journal; original and eclectic. Edited by Daniel Drake, M.D, and Guy W. Wright, M.D. Nos. 6, 7, 8. In Exchange.


MEDICAL LEGISLATION.

[The following regulations concerning the Practice of Medicine, were passed during the recent session of our Legislature. As they relate to subjects of general interest to the profession, we are induced to publish them in full.—Ed.]

OF THE PUBLIC HEALTH.

CHAP. XIV.—TITLE VII.

General Regulations concerning the Practice of Physic and Surgery in this State.

Sec. 1. The president of every County Medical Society shall give notice in writing, to every physician and surgeon, not already admitted into such society, within the county in which the society of which he is president is situated, requiring such physician or surgeon, within sixty days after the service of such notice, to apply for and receive a certificate of admission, as a member of such society.

Sec. 2. The service of every such notice shall be made personally on the physician or surgeon to whom it shall be directed: and if such physician or surgeon shall not, within the time specified in the notice, or within such further time as may be allowed by the president, under the regulations of the society, apply for a certificate of membership in such society, his license shall be deemed forfeited, and he shall be subject thereafter, to all the provisions and penalties of the laws of this state in relation to unlicensed physicians, until, upon a special application, he shall be admitted a member of the medical society in the county in which he shall reside.

Sec. 3. If there shall be preferred to any county medical society, specific charges against any member thereof, of gross ignorance or misconduct in his profession, or of immoral conduct or habits, a special meeting of the society to consider the charges shall be called, of which at least ten days previous notice shall be given, in one or more of the newspapers printed in the county.
Sec. 4. If two thirds of the members present at such meeting shall be of opinion that the charges preferred are well founded, the president of the society shall, without delay, deliver a certified copy of the charges, and of the vote of the society thereon, to the district attorney of the county, and shall give notice of such delivery to the member accused, who from that time shall be suspended from the practice of physic and surgery, until the determination of such charges, in the manner herein-after provided.

Sec. 5. The district attorney to whom the charges shall be delivered, shall serve a copy thereof without delay, on the member accused, and at the same time shall give him notice of the time and place at which the judges of the court of common pleas of the county will meet, for the purpose of hearing and determining the same: such notice shall be served at least fourteen days before the time of hearing appointed.

Sec. 6. The district attorney shall conduct the prosecution of the charges, and shall issue process to compel the attendance of such witnesses, as the president of the society and the member accused shall severally require.

Sec. 7. The judges of the county court, at the time and place of hearing appointed, or at such other time and place as they shall fix, shall proceed to hear and determine the charges, and shall examine, on oath, the witnesses produced: if they, or a majority of them, shall be satisfied, from the evidence, that the charges are true, they shall make an order, which shall be valid in law, expelling the member accused from the society, and declaring him for ever thereafter incapable of practising physic and surgery within this state, or suspending him from such practice, for a limited period: if they shall be of opinion that the charges are not established, the suspension of the member accused shall cease, and he shall be restored to all his rights and privileges as a practising physician and surgeon.

Sec. 8. No student shall be admitted to an examination by any medical society, until he shall have completed, with some physician and surgeon, duly authorized by law to practise his profession, the term of medical study prescribed in the following sections of this Title:

Sec. 9. The regular term of the study of medical science shall be four years, but a deduction from such term in no case to exceed one year, shall be made in either of the following cases:

1. If the student, after the age of sixteen, shall have pursued any of the studies usual in the colleges of this state, the period during which he shall have pursued such studies, shall be deducted.

2. If the student, after the age of sixteen, shall have attended a complete course of all the lectures delivered in an incorporated medical college in this state, or elsewhere, one year shall be deducted.

Sec. 10. The physician and surgeon with whom a student shall commence his studies, shall file a certificate with the president of the county medical society to which he belongs, certifying that such person has se
commenced his studies; and the term of study shall be considered as commencing on the day on which such certificate is filed.

Sec. 11. If the term of study shall be intended to be for less than four years, upon either of the grounds mentioned in the ninth section of this Title, the president, with whom the certificates shall be filed, upon satisfactory proof that a deduction ought to be allowed, shall annex to such certificate, an order specifying the period, not exceeding one year, which, according to the proof exhibited to him, ought to be deducted from the term of four years, and directing that the term of study of the student shall be for the period that shall remain.

Sec. 12. No person shall receive from the regents of the university a diploma, conferring the degree of doctor of medicine, unless he shall have pursued the study of medical science for at least three years, after the age of sixteen, with some physician and surgeon, duly authorized by law to practise his profession, and shall also after the same age, have attended two complete courses of all the lectures delivered in an incorporated medical college, and have attended the last of such courses in the college by which he shall be recommended for his degree.

Sec. 13. No student shall be admitted to an examination by any county medical society, except of the county in which he shall have pursued his medical studies for four months immediately preceding his examination; but if the student during that period, shall have attended the lectures in either of the incorporated medical colleges of this state, he may be examined and licensed, either by the medical society of the county in which such college is situated, or by that of the county in which he shall have resided, previous to such attendance.

Sec. 14. No person who shall have been examined by the censors of any county medical society, as a candidate for the practice of physic and surgery, of either of them, and shall have been rejected on such examination, shall be admitted to an examination before the censors of any other county medical society; but such person may appeal from the decision of the censors by whom he shall have been examined, to the medical society of the state.

Sec. 15. No person who, either upon an original examination or upon an appeal, shall have been rejected by the censors of the state medical society, shall thereafter be admitted to an examination before the censors of any county medical society.

Sec. 16. No person shall practise physic or surgery, unless he shall have received a license or diploma for that purpose, from one of the incorporated medical societies in this state, or the degree of doctor of medicine from the regents of the university; or shall have been duly authorized to practise by the laws of some other state or country, and have a diploma from some incorporated college of medicine, or legally incorporated medical society, in such state or county.
Sec. 17. No person coming from another state or country, shall practise physic or surgery in this state, until he shall have filed a copy of his diploma with the clerk of the county where he resides, and until he shall have exhibited to the medical society of that county, satisfactory evidence that he has regularly studied physic and surgery, according to the requisitions of the ninth section of this Title.

Sec. 18. No diploma, granted by any authority out of this state, to an individual who shall have pursued his studies in any medical school within this state, not incorporated and organized under its laws, shall confer on such individual, the right of practising physic or surgery within this state.

Sec. 19. Every person licensed to practise physic or surgery, or both, shall deposit a copy of such license with the clerk of the county where he resides, who shall file the same in his office; and until such license is so deposited, such person shall be liable to all the penalties provided by law, in the same manner as if he had no license.

Sec. 20. No person under the age of 21 years shall be admitted to practise physic or surgery in this state.

Sec. 21. The degree of doctor of medicine conferred by any college in this state, shall not be a license to practise physic or surgery; nor shall any college have, or institute a medical faculty, to teach the science of medicine, in any other place than where the charter locates the college.

Sec. 22. Every person not authorized by law, who for any fee or reward shall practise physic or surgery within this state, shall be incapable of recovering by suit, any debt arising from such practice, and shall be deemed guilty of a misdemeanor, punishable by fine or imprisonment, or both, in the discretion of the court by which he shall be convicted.
TO READERS AND CORRESPONDENTS.

1. Our next number will contain communications from Professors John Augustine Smith, T. R. Beck, Drs. Ludlow, Lee, &c. &c.

2. Dr. Peixotto's Essay on the Hooping Cough, to which the prize was awarded by the State Medical Society of New-York, and the publication of which has been, hitherto, unavoidably delayed, will be published in the course of the ensuing month.

3. University of the State of New-York.—The number of Students attending the College of Physicians and Surgeons in this city, during the present session, is one hundred and fourteen; and of those attending the College in the Western District, one hundred and seventy-one, making in all, a class of nearly 300 Students attending the medical department of the University.

4. With much pleasure we have seen the prospectus of a Journal about to be published, in this city, in the French language. Its title is, the "Journal des Sciences Naturelles de L'Amerique du Nord," and its plan is of the most comprehensive character, embracing not merely all the departments of medicine, but the whole circle of the natural sciences. The Editor is, Dr. Xavier Tessier, already distinguished as the former editor of the "Journal of Medicine of Quebec."

5. The press of matter in the present number has excluded several articles, which shall appear in our next.

No. XXV. will be published on the last day of March.
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THE NEW-YORK MEDICAL AND PHYSICAL JOURNAL.

CONDUCTED BY

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1828.
ADDRESS ALL LETTERS, ETC., TO
THE LORRY,
N. 9, NATIONAL CITY BANK,
735 FIFTH AVENUE, NEW YORK CITY.
ART. I. A Lecture on Medical Philosophy, delivered in the College of Physicians and Surgeons, on Monday the sixth of November, 1827. By J. Augustine Smith, M.D. Professor of Anatomy and Physiology in the University of the State of New-York.

[The following Discourse is published partly to correct erroneous impressions of its scope and objects, and partly in the hope that a wider diffusion of the principles which it inculcates will tend to the permanent improvement of Medical Science.—J. A. S.]

GENTLEMEN.

My name standing first in the numerical order of my colleagues, it has, in consequence, devolved upon me to open the present session of the College. To discharge this duty with propriety, anatomy and physiology, the subjects especially committed to my charge, must be for the time in abeyance. A wider field is to be ranged, and some topic must be selected not less interesting but more comprehensive. Accordingly, I propose to engage you in a discussion sufficiently general and sufficiently important. It is my design to examine into the philosophy which has prevailed, and still
prevails, in medicine—an investigation which, in my opinion, is greatly required. For look first at the records of our science, and see how theory, as these whimsies have been termed, has succeeded theory, each rising and glittering, yet bursting in its turn. Observe, then, the actual condition of the profession, and what a scene does it exhibit to those, who feel what their vocation ought to be—who are aware what it is—and who reflect how large a portion of human happiness depends upon the soundness of medical principles and the correctness of medical practice! Everywhere are we mortified by frivolous disputes and idle conjectures, assertions which are apocryphal and systems which are false; the whole rendered more humiliating and disgusting by a copious admixture of bad feelings and angry passions. But this never can be right—we must have gone astray—we must have failed to observe those dictates of right reason which, as rules of philosophizing, have conducted other inquirers, with serene tempers and kindly dispositions, to certainty and truth. Here then must be the fault; here must be the source of all our errors, our broils, and our contests. Our philosophy is wrong and requires to be corrected.

To induce and to enable you to make this correction, are the objects of the ensuing discourse. In their pursuit, I shall first give you some idea what philosophy really is; I shall next point out the mistakes with regard to it which have been committed; I shall then show you the evils resulting from those mistakes; and lastly, I shall endeavour to deduce from the principles which shall have been established, the means of permanent improvement to the healing art.

To begin then with our philosophy.

When any occurrence attracts our attention, our curiosity is excited, and we wish to understand it. Now an explanation must be sought in one of three several ways. We must simply generalize the fact, or we must resolve it into another fact of a more comprehensive character, or lastly, we must enumerate in the regular order of succession, the circumstances which precede the event under consideration. In the two first cases, our solutions are complete when we ar-
rive at what are called the Laws of Nature, or more properly ultimate facts; in the last, our analysis is perfected when we ascertain the entire series of phenomena which can alone usher in the one which we are investigating.

Such, gentlemen, is philosophy when reduced to its bare elements, and the propositions which express it in this very abstracted form, would admit of much curious illustration. To indulge in this, however, would be too foreign to our present purpose, and a single example under each head must suffice.

Suppose, then, we wish to know why a stone falls to the ground? The reply is, that all bodies mutually attract, and consequently the earth and the stone acting in this manner on each other, are brought into contact. Here you perceive that a fact which is general has been substituted for one that is particular.

But it may be occasionally observed that bodies, instead of approaching the earth, move in an opposite direction, and we may be desirous of knowing whence this proceeds. To satisfy our curiosity, Natural Philosophy demonstrates that the ascent of bodies which are light, is as much the effect of the attraction of which I have spoken, as the descent of those which are heavy. In this case, then, we have two particular and apparently opposite facts resolved into the more general one of gravitation.

Lastly, we sometimes hear it thunder, and the cause of this may be an object of inquiry. In that event, the same science shows us that there is a fluid called electricity; that this fluid is liable to have its equilibrium disturbed; that when this happens, there is a strong tendency in it to pass from those bodies having an excess, to those in which there is a deficiency, &c. In other words, to account for the noise called thunder, we have to enumerate, in the order in which they occur, all the circumstances which of necessity precede the perception of such a sound by the ear.

Now these various modes of explaining the phenomena of the physical or moral world, and the method of investigation with regard to both is the same, agree in some respects.
though they differ in others. They all agree in proceeding upon facts and nothing but facts; and they further concur in terminating in facts, of which no other account can be given than that such is the will of the Creator.

But there is a marked distinction in the conclusions to which these different processes lead. If we adopt either of the two first, our results are general. If we employ the last, our inquiries, however far they may be pushed, must always end in particulars. By the first two methods, when carried to their utmost limits, we establish, as I have already observed, the Laws of Nature, and to one of these laws it follows as corollary, there can be no exception. For whoever undertakes to announce such a law, does in reality aver that some fact is universally and invariably true. But if it can be shown, in any one instance, that the supposed fact is not universally and invariably true, the statement of course is false, and the law does not exist. Take the law of gravity to which I have before referred as an example. It is expressed in the following words: "that bodies attract each other directly as their masses and inversely as the square of their distances." Now if it can be proved that there is any one body in the universe, with regard to which this rule does not obtain, there is no such thing as the law of gravity.

To apply this to medicine. Suppose a theorist to lay it down as a law of the system, that the cause of fever is an inflammation of the stomach and bowels,* (the gastroenterite of the French schools) and any one patient can be produced labouring under this disease, in whom no inflammation of the kind exists, there is an end of the proposition as a law. For independently of what I have already stated,

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* It is alleged by the friends of Mons. Broussais, that he does not invariably locate his inflammation in the stomach and duodenum. Exceptions to his general proposition are, I suspect, extremely rare in the mind of Mons. B.; but it will be seen that my argument applies to his rule, however modified, and is equally valid, whatever view of his doctrine may be taken.
it must be for ever borne in mind, what seems never to have occurred to some speculators in medicine, that one breach in the succession of events, provided it be sufficiently established, is as fatal to our notion of cause and effect, as a thousand such failures. What may be the connexion between phenomena, in virtue of which one follows another, it is not necessary for me to inquire, since it is admitted on all hands that invariability of antecedence is absolutely indispensable to the idea of causation. Mere coincidence, therefore, as regards time and place, however frequent, if not perfectly uniform, is to be held fortuitous and not essential. Now that multitudes of cases of fever have occurred where there was no trace of inflammation of the stomach or intestines, or indeed of any other organ, is as certain as dissection, to say nothing of other proofs, can render any negative fact in the world. What then becomes of Mons. Broussais' law?

But to return. The different methods of philosophizing which I have mentioned, have their respective advantages, but they cannot be used indiscriminately. The tendency of the mind is strongly in favour of the second, that is, to refer less general to more general facts. And this, where it can be done with propriety, is commonly the most useful and by far the most gratifying. The discovery, indeed, of a reference of this kind, where the facts are numerous and imposing, and to common observers remote and contradictory, is the most exquisite of all intellectual enjoyments.* No wonder then there should be such a propensity to attempt them. Where however we know and can command all the circumstances upon which any event depends, the event itself is of course under our control, and for practical purposes nothing further can be required. The objection is, that where these anteced-

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* The "Ερωτημένα: "Ερωτημένα," of Archimedes will at once occur to the reader; and I have heard that Dr. Rittenhouse, on one occasion, almost fainted with pleasure at the verification of an astronomical prediction. Every cultivator of science, however, must have felt something of the intense delight which the discovery of truth imparts to the human mind.
dent circumstances are very numerous the mind is unable to retain them, whereas a happy generalization will embrace a whole science in a single theorem. But such generalizations I fear are little to be expected in medicine, and as the effort to introduce them is the besetting sin of the profession, and the daily source of incalculable mischief to the public, I must, if possible, guard you against the error. To do this was, indeed, the primary object which I proposed to myself when I determined to engage in the present inquiry. I shall therefore expatiate upon it somewhat at large, explaining first the difficulties attending all grand and comprehensive doctrines in medicine, showing secondly the abortiveness of all the attempts which have hitherto been made to introduce such doctrines into the profession, and lastly exhibiting the pernicious consequences which these attempts have produced, both to us and to others.

In the first place then, in all cases of general disease the nerves are more or less implicated, and wherever these mysterious agents are brought into action, our philosophy is exceedingly apt to be foiled. So long as we confine our attention to the bones, muscles, and blood-vessels, we seem to comprehend something of what is going forward; but the moment the nerves become involved, all our a priori reasoning is overthrown, and I have sometimes thought that the rule of contrary afforded the best approximation to the truth.

Secondly. The most efficient agents in the production of disorders, are not cognizable by our senses. Miasmata and atmospheric poisons give us no notice of their presence. We see nothing but effects, and these effects undergo the most extraordinary mutations without previous warning in the first instance, or assignable cause in the second.

Thus the general character of the maladies which infest our country is inflammatory, but in 1813-14, this type was, without the slightest premonitory intimation, suddenly reversed, insomuch that bark and wine became in my hands the remedies for ordinary pleurisy. We talk, indeed, under such circumstances, as Sydenham did, "of the constitution of the atmosphere." But this amounts to very little, since in what
that "constitution" consists we have not the slightest con-
tception.

In the third place, the various influences to which we are
subjected, are nearly innumerable. Heat, cold, moisture,
drought, different kinds of food and of drink, modes of life,
places of abode, feelings, passions, &c. &c. All these are con-
stantly operating upon us, and affecting us to a greater or less
degree. Hence the inhabitants of cold countries are unlike those
of warm. Those who live upon hard and scanty fare, differ
from those who are pampered with delicates. Persons who
are secluded and sedentary, are not affected in the same man-
ner with those who are active and exposed, and those who
breathe the atmosphere of a crowded city, do not resemble
such as inhale the air of the country. In London consequ-
ently, and probably in New-York also, stimuli can be used
with a freedom which in less populous places would be alto-
gether inadmissible.

Fourthly. There is a principle in all animated beings mo-
difying in a way entirely unknown to us, the action of every
agent to which they are exposed, whether remedial or mor-
bific. The existence of such a principle has, indeed, been
denied; for in our happy profession, no proposition can be
supposed too plain to be contested, (the circulation of the
blood has been recently controverted) or too absurd to be
maintained. I shall assume, however, that our disorders are
sometimes relieved without the intervention of medicine, and
as every effect pre-supposes a cause, the power operating in
such cases may, I think, be well designated by the phrase, vis
medicatrix nature.*

Lastly, every person has a certain individuality about him,
physical as well as moral, which constitutes him what he is,
and distinguishes him from all others of his race. These
idiosyncrasies are what a patient means when he talks of his

* The term re-action is, indeed, frequently substituted; but this is spe-
cific, while the former is generic; they cannot, therefore, be used indiffe-
rently.
"constitution"—an expression covering an infinitude of quackery and imposition undoubtedly, but still having a real foundation.

To recapitulate. We have causes then innumerable, imperceptible, and ever varying, operating in the dark, through the instrumentality of agents of whose modus operandi we are ignorant—these agents themselves not acting precisely alike in any two individuals, and the whole modified by a power of which little more is known than the name. And yet these multifarious elements sometimes concurring, sometimes conflicting, occasionally one of them enjoying the supremacy and occasionally another, are all to be reduced to one solitary principle. Why, in comparison to simplification like this, the dreams of the alchemists were most hopeful philosophy.

The fate of these fantastic schemes, the second head of our inquiry, will not detain us long: Who hears now of the humoral pathology, or the error loci of one school, the spasm of a second, or the excitement, excitability, &c. of a third? But for our books, it would not be known that such notions had ever existed, although they convulsed, in succession, the medical world. Their oblivion, however, is in perfect accordance with the law which ordains that the promptness and certainty of dissolution are always in proportion to the facility and rapidity of production. For nothing is so easy as to construct what is dignified with the appellation of a Medical Theory. The following is the recipe. Take a fact true in one case at least, if it will hold in half a dozen, so much the better. Extend it to all times, places, seasons, persons, and circumstances. Let it embrace every malady that flesh is heir to; let it comprehend the whole human family, including men, women, and children, of every age, sex, colour, condition, and profession, and you have a theory possessing all the usefulness, truth, and stability which so very wise a proceeding can be supposed to confer.

But perhaps you think I have borne rather hard upon the theorists. It is not so, however, as a slight retrospect will show.
J. A. Smith on Medical Philosophy.

Thus it having been ascertained that our fluids are sometimes contaminated, the humoral pathology sprang into existence, and every thing was to be explained by a depraved state of our juices.

This being soon found insufficient, and it being observed that a constriction of the surface frequently takes place in fever, the spasm of Cullen became the cause of all mischief. This has equally passed away, and, not to be tedious, it has been finally succeeded by inflammation of tissues and surfaces, particularly of the stomach and bowels. Gastro-enteritis is accordingly the hobby of the day, destined, I have no doubt, to run the usual course of brief popularity and final oblivion.

But our countryman, Dr. Rush, the warmth of whose temperament carried him at once to the "ultima thule" of simplification, affords, perhaps, the best exemplification of what I have stated. He convinced himself of having attained, what he denominated, that the felicity of the expression might equal the magnitude of the discovery, The Unity of Disease. In the fulness of his heart he communicated the sublime idea to one of his old medical friends and correspondents, who shrewd, sensible, and satirical, observed in reply as he informed me, "that one slight difficulty still remained, one little step was yet to be taken, and if Dr. Rush would only add the unity of remedy, the grand consummation would be complete." Unfortunately this was beyond the Doctor's power; and we have now, as formerly, to select as we can, from an abundant materia medica, which the chemists, thanks to their labours, are daily rendering more extensive and more efficient.

We come now to the evils which result from these excessive generalizations.

Of these evils the first and undoubtedly the greatest is, the sacrifice of human comfort and human life which they occasion. This I am aware has been controverted, and it has been contended that our practice has been more consistent and sound than our reasoning. This I believe to be true in part, but in part only. For it was observed of Dr. Cullen
that in the latter stages of fever, he was endeavouring to relax the spasm of his patients instead of supporting their strength. But this is the merest trifle, in my opinion, compared to the mischief inflicted upon mankind by Brunonianism and its opposite, the system of depletion. I know it was said by the friends of the great patron of the latter, that with him the doctrine was innoxious, his good sense correcting, at the bed-side of his patients, the folly of his notions, and that in practice Dr. Rush did not push blood-letting beyond other judicious prescribers. That this may have been true of him, I shall not deny. But how did the case stand with the multitude of young and ardent tempers who were annually turned loose upon the public, with imaginations inflamed by the unmerited and extravagant eulogiums of this favourite remedy? What was the price which the community had to pay, before their experience and tact could neutralize so dangerous an error?

2ndly. The promulgation of these fanciful speculations is particularly injurious to the junior part of the profession, who eagerly catch at them, and are thus diverted from the real business of their lives. To talk fluently of membranes, surfaces, tissues, and contra-stimulants, the cant phrases of the day, and the legitimate successors of excitement, excitability, state of the system, &c. is very easy, very captivating, very imposing—and very useless. Whereas to collect dry details, to arrange them methodically, and then deduce by patient and continued thought those inferences upon which the lives of their patients are hereafter to depend, have, in the first instance, nothing to allure the buoyant and impatient temperament of youth, always ready to spurn the earth and wing their way in the clouds, but sadly averse to delve where alone I fear the truth is to be found.

A third ill consequence resulting from these whimsies is the effect which they produce, not only upon the intellect, but upon the very senses of those who pursue them. The authors, and too frequently the supporters of a system, not only believe as they wish, but what is really wonderful, perceive
after the same manner—their minds and their perceptive organs being equally perverted. Accordingly, while such persons see, hear, and credit with the most extraordinary quickness and facility, whatever tends to support their favourite scheme, they have neither eyes, nor ears, nor faith for facts of a contrary description. And hence it is that so many unfounded and conflicting statements get abroad, both in and out of the profession—the multitude seeing, every man through his own glass. Distrust therefore, not the integrity, but the accuracy of all who have peculiar doctrines to maintain: for be assured, that it is by no means unusual for projectors to put forth, with perfect honesty, the most confident assertions which are entirely destitute of truth. Sometimes, however, it is impossible to predicate either truth or falsehood of their propositions—there being no evidence one way or the other. Take Mr. Broussais as an example, and I quote him, not because I think him more culpable than other speculators, but because he happens to be the leading theorist of the day. In the 29th and following sections of his physiology, of which alone I speak, he writes thus: "The ganglionic nerves preside over the interior movements or functions of the viscera which are independent of the brain, they are the grand agents therefore of the living chemistry." "The ganglionic nerves receive and collect the stimulant influence of the cerebral nerves." "The ganglionic nerves avail themselves of the vital force of the animal, for the purposes of this living chemistry." And much more to the same effect, which I need not quote. Now from the calm, serious, and positive tone with which all this is stated, a suspicion of its fallacy would never enter the mind of an ordinary reader. He would take it for granted that every thing was as sound as it is fair, and that Monsieur Broussais was merely applying acknowledged truths to his particular purposes. Yet so far is this from being the case, that in the present state of our knowledge, what Mons. Broussais affirms of the ganglionic nerves, would be equally authentic if asserted of any other of the internal and intangible parts of
the body—so entirely ignorant are we of the real uses of the ganglionic system.*

Before I take my leave of Monsieur Broussais, I may remark, that I do not believe he will ever acquire the distinction and influence which some of his predecessors have enjoyed. I think so for two reasons. In the first place, there is, I am persuaded, less proneness in the profession than there was to be notional. But secondly and principally, the aphoristic form in which this gentleman has thought proper to clothe his opinions, though very striking at first, is on the whole disadvantageous. There is an unfortunate perspicuity about it which is fatal.† Mysticism, or at least a certain vagueness of expression, is indispensable to error. Where our vision is perfect there can be no deception, whereas a dubious twilight gives ample scope for supposed knowledge and real delusion. Moreover, in the midst of uncertainty every man will interpret to please himself. Proselytes are thus readily obtained, and when once engaged, having to contend at least as much for themselves as their masters, their self-love effectually guarantees their adhesion. And lastly, a disputant entrenched in ambiguity, is invincible; for if driven from one covert, he immediately takes shelter in another, saying, "O that is not what we contend for." And this sort of bush-fighting is interminable—no proposition being ever admitted which is sufficiently definite to be battered down. Now the ideas and phraseology of Mr. Broussais wanting this convenient degree of obscurity and confusion, his system as an exclusive one, for doubtless the stomach and bowels are sometimes inflamed, will never, I apprehend, acquire any very great vogue.

* Majendie has torn out all the accessible ganglia without pain or other perceptible consequence to the animal; the physiology consequently of these bodies is as unknown as the composition of the moon.

† Vide the curious discussion in Campbell's Philosophy of Rhetoric. "Why nonsense so often escapes being detected, both by the writer and the reader."—Philosophy of Rhetoric, Vol. II. p. 112.
Let us revert, however, to the evils of such systems. A fourth is this. Facts which are at one time to account for every thing, are soon found to have been magnified beyond their deserts; they are then neglected and ultimately denied. The spasm of Cullen is too recent to be controverted; it is simply unnoticed, whereas the vitiation of our humours is stoutly contested, although the birth of children covered with the pustules of small-pox demonstrates the fact of our fluids being sometimes contaminated.*

There is one and but one more of the mischievous consequences of these wild speculations with which I shall trouble you. It is of a different character from those which I have already mentioned, and in some respects more injurious.

From the long continuance and almost universal prevalence of loose reasoning and rash generalization in the profession, every thing in medicine is yet unsettled. We have no elementary principles in which all are agreed, and we have consequently no conclusions to which all will assent. Whatever approaches to system, is in a state of perpetual change and revolution. In matters of detail, indeed, it is otherwise. New facts are observed, and new remedies are added, so that our practice undoubtedly improves, and improves greatly; but beyond this, as to anything which in legitimate language can be called theory, I am not aware there is any material amendment. Those who will theorize, as they term it, tread the same ceaseless round of premises which, if not false, are narrow, and of deductions which, if not altogether unwarranted, are pushed far beyond the truth. But this cycle of error alone proves there is something radically wrong. The toil of thousands, if well directed, must have made some advances. Yet in upwards of twenty centuries, in spite of every thing which numbers, zeal, learning, and talents could effect, how little, how very

* Mr. Abernethy says, that this does not happen earlier than the sixth month of foetal life. From this it would appear that at this period the communication between mother and offspring becomes more free.
little has been gained from the terra incognita of systematic medicine? A similar result in the labours of those most ingenious personages the schoolmen, is well known to have convinced Lord Bacon that their philosophy was false. Would that another Bacon might arise, from the same premises deduce the same conclusion, and then regenerate the science of medicine, giving us certainty in our principles, uniformity in our practice, and permanence in our systems!

Upon the effects of so delightful a change, could it be accomplished, it is not my object to descant. But there is one benefit that would ensue upon which, as being less obvious, I will offer a few remarks.

The irritability and querulousness of the profession are proverbial and most lamentable. At all times and in all places has it been rent by discord, and divided into parties, sects, and schools. Let half a dozen medical men be required to give their professional opinions to the public, and they certainly disagree about their facts, and almost as certainly fall to calling each other hard names. But assertions, contradictions, and criminations, however well calculated to excite derision and contempt for the parties concerned, do nothing towards the elucidation of the truth. The Doctors are therefore very properly set aside, and the matter is disposed of as common sense seems to dictate. That my picture is not overcharged, every one conversant with medical history knows, and those who wish for further information, that I may not come too near home for examples, are referred to the discussions which took place in England on the quarantine laws, and the testimony in what is called the Gardner peerage case.

Now this irritability of the profession proceeds in a very great degree, if not exclusively, from the vacillating and dubious state of its principles. Accordingly among those who cultivate the exact sciences, little or nothing of the kind is observable. Among them the certainty which attends every step produces calmness and equanimity, or should a difference of opinion arise, it is settled at once without difficulty or animosity by an appeal to data universally admitted to be
In medicine all this is reversed. Nothing being determined or fixed, every one is at liberty to construct a system according to his own fancy; and as no employment is more delectable to minds of a certain, and by no means uncommon description than castle-building in all its varieties, these aerial structures of course abound.* Unfortunately, however, exclusiveness is the very essence of such schemes, and projectors, like other potentates, "can bear no rival near the throne." Contests and collisions therefore between the parties are unavoidable; and all being equally ready for defence or attack, and alike unprovided with authenticated facts to support themselves or confute their opponents, they are compelled to dismiss reason and logic, and then of course have to rely upon the poor weapons which petulance and passion can supply. The consequences may be readily imagined, and have indeed already been detailed. Let us endeavour then to correct our philosophy, that our manners as well as our minds may be benefited by the reformation.

I have thus, gentlemen, laid before you the deplorable effects of this rash spirit of generalization which has so greatly infested the profession, and which with its consequences, constitutes the true and only opprobrium medicorum.† But be-

* These day-dreams, while they tickle most agreeably the imagination, constitute no tax upon the mind in the way of labour or thought. Were they only as harmless to others as they are pleasant to the individual, the philosopher would smile, but never think of awakening the dreamer.

† Notwithstanding the blot mentioned in the text, the medical escutcheon is one of which any member of the profession may justly be proud. Engaged in the discovery of truth, and in its application to the relief of human suffering, constantly associated with females who constitute much the better portion of the community, and who are then in the situation best calculated for the display and exercise of their virtues, the intellect and the feelings of the physician are equally exposed to the most benign influences. And hence, I presume, it has happened that of those who mingle much with the world, a species of contact extremely apt to leave a soil behind it, the best moral exemplars whom I have ever seen have been medical men.
fore I take my leave of this part of my subject, there are two remarks which I have to make. In the first place I must caution you against supposing that I wish to condemn in the gross the eminent men whose names I have had occasion to mention. So far from this, I willingly acknowledge that they were endowed with great talents, and I further concede, that they were the authors of much good. But with this good was mingled no small portion of evil; and it is to guard you against the one, while you take advantage of the other that I now address you.

My second observation is this. The opinions which I have now expressed are by no means the hasty conceptions of the moment, dressed up for the occasion. On the contrary, they were my settled convictions long before I could trace and methodise them as I have now done. They arose, indeed, while I was yet a student; and as facts, which produced so deep and permanent an impression upon me, may not be without their influence upon you, I will state the occurrences to which I allude.

When I began the study of medicine, the doctrines of Dr. Rush were all the fashion, and like other young men, I imbibed them fully. Thus impressed I went to London, and walking through the wards of St. Thomas' Hospital not long after my arrival, I saw a patient with a full bounding pulse in a high state of erysipelasatous inflammation. Here then was a case requiring, according to my theory, copious blood-letting and other depletions. Yet when I asked the nurse what the man was taking, "Bark," was the reply: Bark, said I, and how often? "Every three hours." And in what form? "Powder, tincture, and infusion, the mode in which we use it." You may easily imagine my astonishment. In forty-eight hours I observed to myself, this poor man will be dead. Next day I stopped to see how he was, found to my astonishment that his pulse had subsided under the use of these stimulants, and that he was better. In a few days he was discharged cured. Fact and hypothesis, you thus perceive, were brought fairly to issue, and with a sigh I have no doubt, although I do not now recollect it, the latter was obliged to yield. Had the
bantling been my own, instead of having been adopted, the result might have been different. As it was, however, I abandoned my much cherished notions. But I soon found that I was not alone in error—the medical officers of the institution pushing their doctrine as far into one extreme as I had gone in the other. A man broke his leg, and was attacked in consequence with erysipelas: they gave him bark, and in two days he was a corpse.

Conversing on this subject a few years ago with the most eminent member of the profession in our country, I stated the circumstances which I have just mentioned. "Why," said he, "something of the same kind occurred to myself while a student. Going warm from my books with my head filled with Cullen's fine description of a paroxysm of fever, I found a man labouring under a severe attack of it. 'So, my friend,' said I to him, 'you first began to feel sluggish, then cold, and so on.' 'No indeed,' replied the man, 'I felt no such thing. I was never better in my life, when all at once I began to burn, and have been as hot as fire ever since.' I was," he continued, "as much disconcerted as yourself, and became immediately aware that all was not right." That all is not right is certain, and it only remains to render that so which has heretofore been wrong. But on this point I shall be exceedingly brief, as nothing could be more absurd than an attempt to point out new modes of arriving at truth. They are already sufficiently well known; the difficulty being here, as in cases of more importance, not to see, but to follow the straight and narrow path.

Facts, as I have before stated, are the basis of all philosophy; and to ascertain these, is of course the first great object. Now there are four methods by which this can be done—observation, experiment, calculation, and deduction. Of these, calculation is excluded from medicine: we must content ourselves, therefore, with the other three. Of these, the first and second are by far the most important. But experiments, from the peculiar circumstances of the profession, should be attempted with more reserve and caution than I fear are frequently practised. In hydrophobia, tetanus, hydrocephalus, and other equally intractable disorders, the administration of
novel and hazardous remedies, provided they hold out a glimpse of hope, is both justifiable and commendable. But as a disease becomes controllable, whether we consider the time in which it can be cured or the ease and certainty with which this can be effected, we are to abstain from tampering with the life or comfort of a patient.

With regard to *inferring conclusions*, whether general or particular, if what I have said do not teach you prudence and circumspection, it were useless to add any thing further. Let me remind you, however, that the reverse of error does not constitute truth. The golden rule of Aristotle, and a most golden one it is, enjoins upon us that virtue is equally removed from all extremes. Do not, therefore, in your anxiety to avoid vain and pernicious speculations, become downright empirics—a mistake infinitely less dangerous no doubt and unfrequent than the other, but still a mistake, and therefore to be avoided. I must add, however, that when we observe the manner in which medical investigations have been conducted, and the evils which have thence ensued to the profession and the public, a little extra horror of hypothetical reasoning is, in my opinion, by no means to be censured. Reasoning of this description, be it remembered, even when well founded, and according to Dr. Fordyce it is in every case a million to one that it is false,* is by no means indispensable to the melioration of the healing art. He who should discover a remedy for tubercular consumption, would be quite as great a benefactor to humanity as he who should generalize, with success, the phenomena of fever. Simplification is doubtless desirable, but extension is more so, and these two improvements by no means and of necessity go on pari passu. In astronomy, indeed, this has been remarkably the case. For supposing the heavenly bodies once put into motion, every thing can be traced to the single fact of mutual attraction. But this is a peculiarity in the sublimest of the physical sciences, and admits of no parallel. In chemistry, on the other hand, the most progressive of philosophi-

* He argued thus. On every subject a million of hypotheses may be formed—therefore, it is a million to one against any one hypothesis.
cal pursuits, the reverse has been the fact—the complexity of
the science having increased in a full ratio with its utility
and importance. The ancients were contented with four ele-
ments. These have been discarded altogether, and in place
of them we have now fifty, and may hereafter have fifty more.
Now a living body may be esteemed a chemical apparatus,
exceedingly curious and complicated, and possessed, more-
over, of a power to which in mere chemistry there is nothing
analogous. Common sense, therefore, seems to me to teach
us, that the operations of such a machine must be proportion-
ally involved, and that consequently, any violent simplification
of them is necessarily false.

What can be alleged then under this head, may be sum-
med up in a single sentence. It is our business "to observe
well, to observe long, and to observe all;" to experiment when
allowable with care and accuracy, and from facts thus ascer-
tained, deduce the principles which they warrant.

I have thus I hope, gentlemen, satisfied you of the truth of
the propositions which I undertook to establish, "that our
philosophy is wrong, and that it requires to be corrected." And I hope you are further convinced, that all attempts at
extensive generalizations in medicine are premature, and at
this time injurious, and consequently, that for the present at
least, we must content ourselves with the third mode of phi-
losophizing which I have mentioned. In other words, that it
is for us to detect the special causes of disease and to control
them and their effects, so far as it may be in our power.
And as to the general laws which regulate the operations of
the human system, whether morbid or healthy, since no intel-
lect on earth can now detect them, they are to be reserved for
one of those superior geniuses, who, born at a lucky moment,
are destined to shed light and lustre upon the world.

Such, gentlemen, are the conclusions to which we have ar-
rived, and on which I wish your minds finally to rest. But
clear as I trust our results are in the abstract, how far they are
likely to be adopted in practice, is a question which I almost
fear to ask myself. Our very nature is against them. Useless
silly conjectures, therefore, and vain aspirations after splendid
theories, although they degrade the profession, and what is
immeasurably worse, although they sacrifice our patients at the altar of our follies, are still too deeply rooted in our dispositions to be readily abandoned. For thus it ever is with the sons of Adam. Prone to evil and averse to improvement, the effort to reform them is of all human undertakings the most forlorn. With the old and the bigoted, the task is absolutely hopeless. But with you, whose minds have yet re-received no particular taint, and whose only object is advancement in the cause in which you are engaged, the prospect is better. Upon you some effect may be produced, and from you, consequently, my colleagues and myself may derive the highest reward which teachers of medicine can ever attain—that their pupils at the close of a long and successful professional career, should look back with pride and satisfaction upon the lessons which they imbibed from the preceptors of their youth.


Insanity, with its causes, its increase and its treatment, is a subject of deep interest to every civilized community. Its peculiar but melancholy characteristic, which forbids any reasonable hope of cure, unless the diseased subject is removed from his home and relatives, imposes the duty on governments of providing for its proper management, both as to safe-keeping and as to the means of recovery. That the legislators of this country and its inhabitants have not been unmindful of this obligation, we shall endeavour to show in the course of the present article.

We shall first notice the Lunatic Asylum of this state. The "Society of the New-York Hospital" was incorporated in 1771; and by the liberality of domestic contributors, the legislature of the province, and contributors in England, sufficient funds were obtained for the erection of a proper building. This was proceeded in with great spirit, but in Feb. 1775, when it was almost completed, it accidently took fire and was nearly consumed.
"By this misfortune, the society suffered a loss of seven thousand pounds; and the execution of their benevolent plan would have been wholly suspended, had not the legislature in March 1775, generously granted them the sum of £4,000 towards rebuilding the house and repairing the loss they had sustained. But the war between Great Britain and the colonies, which took place in the same year, prevented the completion of the edifice. During the war, the house was occupied by British and Hessian soldiers, as barracks, and occasionally as an hospital."

The effects of the war and the general dérangement of the affairs of our citizens, prevented any attention to the institution, and it was not until the 3d of January 1791, that the house was in a proper condition to receive patients, when eighteen were admitted.

From that time to the present, the munificence of the legislature to this institution has been liberal and unwearied—increasing with the increase of the patients, and the enlightened improvements of its governors. On some future occasion, we may notice the History of the Hospital in detail—at present we have stated the above facts only in reference to the subject before us.

As there existed no institution in the state for the reception and cure of lunatics, the governors were induced to appropriate apartments in the hospital for patients of that description. The building, however, not being designed for such a purpose, the accommodations were found to be extremely inconvenient and inadequate; and as the applications for the admission of lunatics constantly increased, it was resolved in 1806, if the legislature would lend its aid for that purpose, to erect a separate building, to be exclusively appropriated to the reception of that unfortunate class of beings.

The application proved successful. A building, denominated the "Lunatic Asylum," was immediately erected in the vicinity of the hospital. This edifice contained 64 rooms, and could accommodate about 70 or 75 patients. It was opened on the 15th of July 1808, under the medical superintendence of Archibald Bruce, M.D.
By an act of the legislature the proper officers in a city or county may contract with the governors of the hospital, for the care and maintenance of any pauper lunatic under their respective jurisdictions, and accordingly many have, from time to time, been sent to it from various parts of the state.

The "Asylum" continued to be the only public institution in this state for the reception of lunatics, until the year 1821, when the "Bloomingdale Asylum" was completed. The history of this we shall hereafter notice.

Dr. Bruce continued physician until 1817, when Dr. William Handy was appointed. He was succeeded in 1819 by Dr. John Nielson.

We now proceed to give a detailed account of the numbers admitted and discharged.

<table>
<thead>
<tr>
<th>Time</th>
<th>Admitted</th>
<th>Discharged</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Ja.31,1795 to Dec.31, 1803</td>
<td>215</td>
<td>215</td>
</tr>
<tr>
<td>1804</td>
<td>11</td>
<td>46</td>
</tr>
<tr>
<td>1805</td>
<td>15</td>
<td>60</td>
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<tr>
<td>1806</td>
<td>20</td>
<td>68</td>
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<tr>
<td>1807</td>
<td>21</td>
<td>47</td>
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<tr>
<td>1808</td>
<td>24</td>
<td>66</td>
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<tr>
<td>1809</td>
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<td>80</td>
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<tr>
<td>1810</td>
<td>42</td>
<td>91</td>
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<td>1811</td>
<td>56</td>
<td>108</td>
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<tr>
<td>1812</td>
<td>52</td>
<td>127</td>
</tr>
<tr>
<td>1813</td>
<td>64</td>
<td>105</td>
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<td>1814</td>
<td>70</td>
<td>104</td>
</tr>
<tr>
<td>1815</td>
<td>82</td>
<td>69</td>
</tr>
<tr>
<td>1816</td>
<td>74</td>
<td>49</td>
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<tr>
<td>1817</td>
<td>76</td>
<td>49</td>
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<tr>
<td>1818</td>
<td>72</td>
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<td>1819</td>
<td>70</td>
<td>78</td>
</tr>
<tr>
<td>1820</td>
<td>64</td>
<td>87</td>
</tr>
<tr>
<td>1821</td>
<td>61</td>
<td>60</td>
</tr>
<tr>
<td>to July 21st.</td>
<td>1584</td>
<td>700</td>
</tr>
</tbody>
</table>
Admitted from Jan. 31, 1795, to July 21, 1821, 1584
Discharged, Recovered, - - - - 700
Relieved, - - - - 241
Discharged, from various causes, as request or eloped, - - 437
Incurable, - - - - 11
Died, - - - - 153
Transferred to the Bloomingdale Asylum,
July 21, 1821, - - - - 52*

Causes.—These are not given in the printed reports, with the single exception, that for some years the cases originating in intemperance are mentioned. Thus in

<table>
<thead>
<tr>
<th>Year</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1814</td>
<td>17</td>
</tr>
<tr>
<td>1815</td>
<td>9</td>
</tr>
<tr>
<td>1816</td>
<td>4</td>
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<tr>
<td>1817</td>
<td>5</td>
</tr>
<tr>
<td>1818</td>
<td>27</td>
</tr>
<tr>
<td>1819</td>
<td>26</td>
</tr>
<tr>
<td>1820</td>
<td>27</td>
</tr>
<tr>
<td>1821</td>
<td>32</td>
</tr>
</tbody>
</table>

(13 males and 19 females.)

Total for eight years 147 out of about 670 cases, or upwards of one fourth of the whole number.

The immediate cause of death is also mentioned in ten annual reports, viz. from 1811 to 1820 inclusive.

The whole number of deaths for that period was, 88

Of these there died of Mania, - - - 24
Mania and Paralysis, 1
Apoplexy, - - 12
Phrenitis, - - 2
Epilepsy, - - 3
Palsy, - - 4
Convulsions, - - 1

* We can find no trace of these "52" in the records of the Bloomingdale Asylum. They are not accounted for, as will be seen, in the reports of that institution.
Dysentery, - 5
Diarrhœa, - 4
Consumption, - 14
Pneumonia Typhodes, 1
Marasmus, - 5
Decay, - 1
Debility, - 1
Abscess, - 1
Gangrene, - 2
Scirrhous Liver, - 1
Syphilis, - 2
Typhus, - 4—88

"In consequence of a communication made to the governors, in April 1815, by Thomas Eddy, stating the advantages that might be produced, by introducing a course of moral treatment for the lunatic patients, more extensive than had hitherto been practised in this country, and similar to that pursued at the "Retreat," near York in England, and proposing that a number of acres of ground near the city should be purchased, and suitable buildings erected for the purpose, a committee was appointed to consider of the plan proposed, and to report their opinion thereon. This committee, having approved of the plan and recommended its adoption, the governors resolved to carry it into effect, if they could obtain the aid of the legislature. Application having been made for that purpose, an act was passed on the 17th April 1816, granting to the hospital the yearly sum of $10,000 until the year 1857, to enable the governors to erect further and more extensive accommodations for insane patients." Grounds to the amount of 77 acres and lying on the Bloomingdale road, about seven miles from the city, were purchased, and here the corner stone of a building was laid on the 7th of May 1816. It was completed in 1821.

The building is of stone, three stories high, and contains accommodations for about 200 patients. The land attached to it is laid out in walks and gardens, and when the weather will permit, the patients are allowed to walk abroad, accompanied by the superintendent or one of the keepers. Tame
animals have also been procured for their amusement, and in¬
ocent diversions are permitted: they are allowed to dine in
classes, while religious instruction is from time to time im¬
parted to those who appear able to profit by it.

Dr. John Nielson has been the physician of the Blooming¬
dale Asylum since its opening. There is also a physician
resident at the institution, while a sub-committee of govern¬
ors visit it every week, and a standing committee every
month.*

The following details are taken from the annual reports.

<table>
<thead>
<tr>
<th>Time</th>
<th>Males.</th>
<th>Females.</th>
<th>Total.</th>
</tr>
</thead>
<tbody>
<tr>
<td>From July 27, 1821</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to Dec. 31, 1821</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1822</td>
<td>66</td>
<td>36</td>
<td>102</td>
</tr>
<tr>
<td>1823</td>
<td>83</td>
<td>48</td>
<td>131</td>
</tr>
<tr>
<td>1824</td>
<td>77</td>
<td>44</td>
<td>121</td>
</tr>
<tr>
<td>1825</td>
<td>102</td>
<td>54</td>
<td>156</td>
</tr>
<tr>
<td>1826</td>
<td>97</td>
<td>45</td>
<td>142</td>
</tr>
<tr>
<td>1827</td>
<td>107</td>
<td>27</td>
<td>134</td>
</tr>
<tr>
<td><strong>607</strong></td>
<td><strong>302</strong></td>
<td><strong>909</strong></td>
<td></td>
</tr>
</tbody>
</table>

**DISCHARGED.**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Part of 1821</td>
<td>19</td>
<td>10</td>
<td>12</td>
<td>7</td>
<td>9</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td>1822</td>
<td>48</td>
<td>15</td>
<td>23</td>
<td>42</td>
<td>21</td>
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<td>3</td>
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<td>8</td>
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<tr>
<td>1823</td>
<td>55</td>
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<tr>
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<td>23</td>
<td>42</td>
<td>18</td>
<td>8</td>
<td>3</td>
<td>5</td>
<td>32</td>
</tr>
<tr>
<td>1825</td>
<td>71</td>
<td>15</td>
<td>23</td>
<td>42</td>
<td>20</td>
<td>3</td>
<td>11</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>1826</td>
<td>69</td>
<td>11</td>
<td>17</td>
<td>34</td>
<td>13</td>
<td>3</td>
<td>11</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>1827</td>
<td>67</td>
<td>9</td>
<td>10</td>
<td>34</td>
<td>21</td>
<td>13</td>
<td>9</td>
<td>7</td>
<td>170</td>
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<td><strong>377</strong></td>
<td><strong>73</strong></td>
<td><strong>95</strong></td>
<td><strong>170</strong></td>
<td><strong>3</strong></td>
<td><strong>21</strong></td>
<td><strong>46</strong></td>
<td><strong>32</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The numbers to the end of the year 1827, will stand thus.

**Admitted,**

From the 27th July 1821 to the 31st Dec. 1827, 909

**Discharged,**

Recovered, - - - - 377
Much improved, - - - 73
Improved or relieved, - - 102
Discharged by request, - - 170
Improper objects or eloped, - 24
Unimproved, - - 32
Died, - - - - 46
Remaining Dec. 31, 1827, - 85

909

**Species of Insanity.**—There is considerable variety in the arrangement of the species of insanity. We shall state them as given in each report.

<table>
<thead>
<tr>
<th>Year</th>
<th>Mania</th>
<th>Monomania</th>
<th>Melancholia</th>
<th>Dementia</th>
<th>Imbecility adventitious</th>
<th>Imbecility habitual</th>
<th>Idiocy</th>
<th>Hemiplegia</th>
<th>Hypochondriasis</th>
<th>Mania a potu</th>
<th>Furious and melancholy</th>
<th>Fatuous</th>
<th>Imbecile</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1822</td>
<td>42</td>
<td>-</td>
<td>7</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>37</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>102</td>
</tr>
<tr>
<td>1823</td>
<td>55</td>
<td>-</td>
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<td>18</td>
<td>2</td>
<td>14</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>19</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>131</td>
</tr>
<tr>
<td>1824</td>
<td>42</td>
<td>-</td>
<td>20</td>
<td>-</td>
<td>17</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>40</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>121</td>
</tr>
<tr>
<td>1825</td>
<td>57</td>
<td>-</td>
<td>36</td>
<td>20</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>43</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>156</td>
</tr>
<tr>
<td>1826</td>
<td>63</td>
<td>-</td>
<td>23</td>
<td>-</td>
<td>15</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>35</td>
<td>7</td>
<td>13</td>
<td>13</td>
<td>142</td>
</tr>
<tr>
<td>1827</td>
<td>82</td>
<td>-</td>
<td>19</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>10</td>
<td>4</td>
<td>174</td>
<td>-</td>
<td>7</td>
<td>13</td>
<td>786</td>
</tr>
</tbody>
</table>

341 103 28 74 2 14 10 3 4 174 7 13 13 786

**Causes.**—These are given in detail for one year only, viz. 1826; of 142 cases, there arose from

Bodily disease, - - - - - - 84
Organic affection of the brain, original or acquired, 4
Hereditary, - - - - - - 6
Primarily moral, - - - - - - 36
Unknown, - - - - - - 13

In 1822, 33 cases were from intemperance.
In 1823, 22 from do.
In the reports, the old and recent cases are distinguished from each other. We are not able, however, to make the ensuing tables perfectly complete, in consequence of the deaths or elopements not being in all cases referred to one or the other. They are generally added, without reference to the length of the illness.

**OLD CASES.**

<table>
<thead>
<tr>
<th>Time</th>
<th>Admitted</th>
<th>Discharged</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remaining of 1821</td>
<td>65</td>
<td>4</td>
</tr>
<tr>
<td>1822</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>1823</td>
<td>58</td>
<td>18</td>
</tr>
<tr>
<td>1824</td>
<td>70</td>
<td>27</td>
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<tr>
<td>1825</td>
<td>67</td>
<td>20</td>
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<tr>
<td>1826</td>
<td>49</td>
<td>1</td>
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<tr>
<td>1827</td>
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<td></td>
<td>360</td>
<td>72</td>
</tr>
<tr>
<td>Total,</td>
<td></td>
<td>281</td>
</tr>
<tr>
<td>Remaining Dec. 31, 1827</td>
<td></td>
<td>70</td>
</tr>
</tbody>
</table>

**RECENT CASES.**

<table>
<thead>
<tr>
<th>Time</th>
<th>Admitted</th>
<th>Discharged</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remaining of 1821</td>
<td>18</td>
<td>44</td>
</tr>
<tr>
<td>1822</td>
<td>73</td>
<td>37</td>
</tr>
<tr>
<td>1823</td>
<td>73</td>
<td>21</td>
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<tr>
<td>1824</td>
<td>51</td>
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<tr>
<td>1825</td>
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<tr>
<td>1826</td>
<td>93</td>
<td>65</td>
</tr>
<tr>
<td>1827</td>
<td>92</td>
<td></td>
</tr>
<tr>
<td></td>
<td>489</td>
<td>286</td>
</tr>
<tr>
<td>Total,</td>
<td></td>
<td>438</td>
</tr>
<tr>
<td>Remaining Dec. 31, 1827</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

Remaining Dec. 31, 1827, - 453
If to the Old Cases discharged 351 and Recent Cases discharged 453, we add Deaths, - - - 44 Eloped, - - - 21 —869

We shall have the amount equal to those admitted, viz. Old Cases - - - 380 Recent Cases - - 489 —869

The proportion of each sex recovered, is given as follows:

<table>
<thead>
<tr>
<th>MALES</th>
<th>FEMALES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1822</td>
<td>38</td>
</tr>
<tr>
<td>1823</td>
<td>37</td>
</tr>
<tr>
<td>1824</td>
<td>41</td>
</tr>
<tr>
<td>1825</td>
<td>57</td>
</tr>
<tr>
<td>1826</td>
<td>50</td>
</tr>
<tr>
<td>1827</td>
<td>53</td>
</tr>
</tbody>
</table>

276 82 Total, 358 recovered during part of 1821, 19 377*

The Connecticut Asylum was founded through the combined liberality of the legislature and the citizens of the state. It is situated in the city of Hartford; and judging from the engraving prefixed to the third report, the buildings must be large and spacious, and combine all the comforts of a New-England country residence. It was opened on the first of April 1824, under the medical superintendence of Eli Todd, M.D. This gentleman we have heard spoken of by those who know him,

* The following authorities have been used in preparing the above. *An Account of the New-York Hospital, 8vo. New-York, 1811.—The Same, 8vo. New-York, 1820.—Annual Reports of the Governors of the New-York Hospital to the Legislature from 1802 to 1827. (Journals of the Senate and Assembly for the respective years.)—Reports of the Bloomingdale Asylum for 1822, 1823, 1824, 1825, 1826, 1827.*
as one of the first medical men in his native state; and his success, as we shall hereafter show, is a most satisfactory proof that his qualifications have not been overrated.

A remark made in the first report strikingly illustrates the value and indeed necessity of establishing lunatic asylums. Many, it is observed, whom it was found necessary, when at home, to confine in chains, became uniformly, in a few days after their admission, orderly and inoffensive, and needed little or no restraint.

The following extract from the report of the visiting physicians, dated May 11, 1827, will enable our readers to judge concerning the mode of treatment pursued in this establishment.

"In respect to the moral and intellectual treatment, the first business of the physician, on the admission of a patient, is, to gain his entire confidence. With this view, he is treated with the greatest kindness, however violent his conduct may be,—is allowed all the liberty which his case admits of, and is made to understand, if he is still capable of reflection, that so far from having arrived at a mad-house, where he is to be confined, he has come to a pleasant and peaceful residence, where all kindness and attention will be shown him, and where every means will be employed for the recovery of his health. In case coercion and confinement become necessary, it is impressed upon his mind, that this is not done for the purpose of punishment, but for his own safety and that of his keepers. In no case is deception on the patient employed or allowed—on the contrary, the greatest frankness, as well as kindness, forms a part of the moral treatment. His case is explained to him, and he is made to understand, as far as possible, the reasons why the treatment to which he is subjected has become necessary.

"By this course of intellectual management, it has been found as a matter of experience at our Institution, that patients, who had always been raving when confined without being told the reason, and refractory, when commanded instead of being maltreated, soon became peaceable and docile.

"This kind of treatment of course does not apply to idiots, or those labouring under low grades of mental imbecility, but it is applicable to every other class of mental diseases, whether maniacal or melancholic.

"In respect to the medical and dietetic treatment, it also varies essentially in the main, from the course adopted at other hospitals. Formerly patients labouring under mental diseases were largely medicated, chiefly by emetics, cathartics, and bleeding. At the present time this mode of treatment has given place to intellectual and dietetic regimen, in most
European hospitals. The physician of our Institution has introduced a course of practice, differing from both these, but partaking more or less of each. He combines moral and medical treatment founded upon the principles of mental philosophy and physiology. In one class of cases moral, and in another medical treatment, become the paramount remedies, but in each class of cases, both are combined."

We proceed to an analysis of the cases reported.

**Number admitted and Sex.**

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Year, from April 1, 1824, to April 1, 1825,</td>
<td>33</td>
<td>12</td>
<td>44</td>
</tr>
<tr>
<td>3rd Year, from April 1, 1826, to April 1, 1827,</td>
<td>22</td>
<td>15</td>
<td>37</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>10 to 20</th>
<th>20 to 30</th>
<th>30 to 40</th>
<th>40 to 50</th>
<th>50 to 60</th>
<th>60 to 70</th>
<th>70 to 80</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Year,</td>
<td>—</td>
<td>11</td>
<td>11</td>
<td>12</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>44</td>
</tr>
<tr>
<td>3rd Year,</td>
<td>4</td>
<td>17</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td>—</td>
<td>37</td>
</tr>
</tbody>
</table>

**Species of Insanity.**

<table>
<thead>
<tr>
<th></th>
<th>1st Year</th>
<th>2d Year</th>
<th>3rd Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mania,</td>
<td>25</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Melancholia,</td>
<td>10</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Idiotism,</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypochondriasis,</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Delirium Tremens,</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total,</td>
<td>44</td>
<td>37</td>
<td></td>
</tr>
</tbody>
</table>

* In the first report, two cases are classified under the name of Delirium *Vigilans*, but as they both originated in intemperance, we have arranged them under the more common appellation of D. Tremens.
Causes.—Of 76 cases, (excluding 5 of idiotism) the causes are given as follows.

<table>
<thead>
<tr>
<th>Cause</th>
<th>Recent</th>
<th>Chronic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hereditary</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Congenital</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Constitutional predisposition</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Intemperance</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Excessive study</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Disappointment in business</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Disappointed affection</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Grief</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Religious excitement or despondency</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Domestic troubles</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Austerity of parental government</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Agitation on the near approach of matrimony</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Puerperal</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Blow on the head</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Bodily disease</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Excessive venereal indulgence</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Long continued typhus fever</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Mental and bodily fatigue under a tropical sun</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Derangement of digestive functions</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Unknown</td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

Results of Treatment.—The cases admitted are divided into recent and chronic. By the former, is understood those whose duration does not exceed one year; while under the latter, are arranged all those in whom the disease has been more prolonged. Thus of 32 chronic cases admitted during the first year, 12 had been insane from one to five years, 8 from five to ten, 6 from ten to fifteen, and 6 from fifteen to twenty. In this number also were included five in a state of helpless idiotism, and 6 in a state of mental decrepitude, admitting neither employment or recovery.

The cases may be arranged as follows.

<table>
<thead>
<tr>
<th>Admitted</th>
<th>1st Year</th>
<th>Recent</th>
<th>12</th>
<th>Chronic</th>
<th>32</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remaining of 2d Year</td>
<td></td>
<td>5</td>
<td></td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Admitted</td>
<td>3rd Year</td>
<td></td>
<td>23</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-66</td>
<td></td>
</tr>
</tbody>
</table>
Beck on the Lunatic Asylums

RECENT CASES.

<table>
<thead>
<tr>
<th></th>
<th>DISCHARGED.</th>
<th>REMAINING.</th>
<th>TOTAL.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Year, 3d Year incl. those remaining of 2d year,</td>
<td>5 2 1 8</td>
<td>1 2 1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>25 1</td>
<td>26</td>
<td></td>
</tr>
</tbody>
</table>

CHRONIC CASES.

<table>
<thead>
<tr>
<th></th>
<th>DISCHARGED.</th>
<th>REMAINING.</th>
<th>TOTAL.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Year, 3d Year, as above,</td>
<td>— 7 3 1</td>
<td>12</td>
<td>6 5 9</td>
</tr>
<tr>
<td></td>
<td>4 5 4</td>
<td>18</td>
<td>1 2 13</td>
</tr>
</tbody>
</table>

The success attending the treatment of the recent cases, is deserving of special attention. "During the last year, (say the medical visiting committee,) there have been admitted twenty-three recent cases, of which twenty-one have recovered; a number equivalent to 91.3-10 per cent.* The whole number of recent cases in the institution during the year, was 28, of which, 25 have recovered, equal to 89.2-10 per cent.

* In another place it is mentioned, that the twenty-second case is convalescent, with every prospect of rapid recovery.
of the United States.

"At two of the most ancient and celebrated institutions of the same kind in Great Britain, the per centage of recent cases cured, has been from 34 to 54. In our own country, at two highly respectable institutions; the recent cases cured have amounted to from 25 to 51 per cent."

With respect to the chronic cases, Dr. Todd remarks, "that the Connecticut Retreat is opened with a broader latitude of admission than is common to other institutions."

"The far-famed Retreat at York in England, professedly devoted to similar objects, admits no idiots, nor maniacal cases reduced to low grades of mental dilapidation. Of the thirty-four chronic cases stated in the present report, nineteen are of the identical description which would have been excluded by the practice of that excellent institution. The remaining fifteen cases on the list, constituted the whole amount in that class, who were properly within the scope of curative treatment, and of this number, only a few were allowed to remain with us through the requisite term of trial prescribed, in such instances, by most other institutions. Six months' residence in the Retreat, has been thought by many who have placed their diseased friends in the Institution, to be a liberal allowance of time for deciding the question of recovery, in cases of 10 years' duration. As if the chaos of illusions, teeming for years in a distempered imagination, and revived with innumerable repetition, by the unexhausted workings of insanity, might be swept at once from the tablets of the mind, by a professional recipe; or the stormy passions of confirmed madness, already threatening the very foundations of intellect, might be hushed and subdued by the sovereign touch of some Esculapian trident! He who seeks for events, not in miracles nor in magic, but in the operation of settled laws, will comprehend why years of persevering effort must be required for the cure of long established cases of insanity; and although he ought never to be sanguine in his hopes, yet, if his mind be endowed with a tact to perceive the subtle individualities of a case, and detect them under the disguise of a general character, he will feel that such a case is marked as distinct and separate from its class, and completely exempted from the general rules of treatment and prognosis: should he have learned to distinguish a derangement of mental functions from a destruction of mental organs, where insanity in the one case is disease, in the other death of intellect; then he may occasionally have the unspeakable satisfaction to discover, here and there, a case on the melancholy list, where the still "glimmering embers of a nearly extinguished intellect" may be kindled, and nursed into a clearer and brighter flame, by the delicate and dextrous administration of long continued and well adjusted moral and intellectual remedies.

"After all, it is an affecting truth, confirmed by the experience of nearly all Lunatic Asylums, that, with every advantage of time, means, and skill,
the proportion of recoveries in this description of patients, rarely exceeds six or eight in the hundred. With this disheartening fact in view, the Retreat had not ventured to anticipate the good fortune it has realized in the recovery of four out of fifteen cases from this class, amounting to the ratio of 26 per centum. While it unfeignedly deplores the sad destiny of those who still remain unrelieved by its exertions, it cannot but feel consoled and supported by the consideration of its comparative success in a class of cases, where the nearest approach to hope is often only a negation of despair."

Friends.—The Asylum for the Insane near Philadelphia, was founded by that religious denomination in imitation of the "Retreat" at York. It is erected in a retired situation, and on elevated ground, five miles from the city of Philadelphia, and one mile from Frankford. The buildings are of stone, and consist of a centre edifice with two wings. The centre building is 60 feet front and three stories high. The wings are each 100 feet front and two stories high. Long galleries divide the ranges of rooms from each other.

The doors have each a moveable small door in the pannel, to be opened from without. The windows of each room have cast-iron frames, and they are so constructed as to be darkened at pleasure. The edifice is warmed by heated air sent through flues issuing from stoves or large ovens, built in the arches of the basement of each wing.

To the buildings are attached workshops for the patients, and the whole are surrounded by airy grounds.

The patients are classified into the harmless and the violent and noisy; the latter are not allowed to come out of their rooms, while the former eat at table with the superintendent and his family. The diet is uniformly good, no meagre days being allowed,—but neither spirituous nor fermented liquors are permitted. The only modes of coercion are, if neces-

* Report of the Physicians of the Connecticut Retreat for the Insane, from the opening of the Institution, April 1, 1824, to April 1, 1825.


No report of the second year has been published.
sary, the shower bath, immersion in water, or the strait waistcoat.

"On every Sunday evening, all the male and female patients, except one or two who are permanently secluded, are collected together in their day-rooms, where a portion of scripture is read to them. This exercise seldom meets with any interruption from them, but on the contrary, there is great silence and quiet."

We have neglected to mention, although that of course will be understood from the name of this institution, that Friends or Quakers only are admitted as patients.

After this brief sketch of the police of the Asylum, we add the following statistical details, given by Mr. Waln.

Admitted, from the opening of the Asylum in May 1817, to the month of March 1825, 158

Discharged, Recovered, - - - - 53
Much improved, - - - - 23
Improved, - - - - 17
Without apparent change, - - - - 9
Died, - - - - 21
Remaining in the house, - - - - 35

— 158

Annual average number of patients during eight years, 19\frac{1}{4}
Annual average number for five years ending in 1825, 31\frac{1}{4}
Average number during the year ending in March 1825, 33*

Besides these institutions, there are others of high reputation in the United States, but of which we have not been able to obtain any authentic account. We would particularly mention the asylum connected with the Pennsylvania Hospital. While the late Dr. Rush was in attendance, the cures

are said to have borne a very large proportion to the number admitted.

A brief comparison between the results obtained in our asylums with those of Europe, will form a proper conclusion to this paper. And first of the

Proportion of cured.

<table>
<thead>
<tr>
<th></th>
<th>Admissions</th>
<th>Cured</th>
<th>Centesimal proportions or No. cured in every 100.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>In the New-York Lunatic Asylum,</strong> from 1795 to 1821</td>
<td>1584</td>
<td>700</td>
<td>44.19</td>
</tr>
<tr>
<td><strong>Bloomingdale Asylum, 6½ years,</strong></td>
<td>909</td>
<td>377</td>
<td>41.47</td>
</tr>
<tr>
<td><strong>Connecticut Asylum,</strong></td>
<td>-</td>
<td>106</td>
<td>31.17</td>
</tr>
<tr>
<td><strong>Friends’ Asylum near Philadelphia,</strong></td>
<td>158</td>
<td>53</td>
<td>33.54</td>
</tr>
</tbody>
</table>

According to Casper, who has examined the returns from the principal hospitals and asylums in England and France, the mean of cures are as follows:

- In France, out of 100 insane, - - 44.81
- In England, out of 100 insane, - - 37.40*

We are, however, in doubt as to the propriety of some of the data assumed by this author, and it will hence be more satisfactory to notice the separate reports of institutions.

<table>
<thead>
<tr>
<th></th>
<th>Admitted</th>
<th>Cured</th>
<th>Centesimal proportion.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>In the Cork Lunatic Asylum,</strong> from Jan. 1, 1798 to June 30, 1818</td>
<td>1431</td>
<td>751</td>
<td>52.49†</td>
</tr>
<tr>
<td><strong>At the Salpetriere and Bicetre, in France,</strong> the cures amount to 2-5ths of the whole,‡</td>
<td>-</td>
<td>-</td>
<td>40.00</td>
</tr>
<tr>
<td><strong>At Aversa in Naples,</strong> 10 years, (1814 to 1823),§</td>
<td>-</td>
<td>-</td>
<td>29.70</td>
</tr>
</tbody>
</table>

† Hallaran’s Practical Observations on Insanity, 2nd. edition.
‡ Edinburgh Medical and Surgical Journal, Vol. XXVIII. P. 230.
§ Idem.
At *Bethlem*, London, (1817 to 1820,)* 54.00
*St. Luke’s*, London, (1800 to 1819,)* 46.00

The average deduced in 1817, from the experience of 15 Asylums and Hospitals in Great Britain and Germany, and comprising nearly 14,000 admissions, was† - - - - 38.00

**Proportion of cured, in Recent and Old Cases.**

<table>
<thead>
<tr>
<th>Asylum</th>
<th>Admitted.</th>
<th>Cured.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bloomingdale Asylum.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recent Cases,</td>
<td>489</td>
<td>286</td>
</tr>
<tr>
<td>Old Cases,</td>
<td>380</td>
<td>72</td>
</tr>
<tr>
<td><strong>Connecticut Asylum.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recent Cases,</td>
<td>40</td>
<td>31</td>
</tr>
<tr>
<td>Old Cases,</td>
<td>66</td>
<td>4</td>
</tr>
</tbody>
</table>

These may be compared with the result in the

*Retreat near York, (from 1796 to 1819.)*

<table>
<thead>
<tr>
<th>Asylum</th>
<th>Admitted.</th>
<th>Cured.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recent Cases,</td>
<td>92</td>
<td>65</td>
</tr>
<tr>
<td>Old Cases,</td>
<td>161</td>
<td>47</td>
</tr>
</tbody>
</table>

**Dr. Burrow’s Private Asylum.**

<table>
<thead>
<tr>
<th>Asylum</th>
<th>Admitted.</th>
<th>Cured.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recent Cases,</td>
<td>242</td>
<td>221</td>
</tr>
<tr>
<td>Old Cases,</td>
<td>54</td>
<td>19</td>
</tr>
</tbody>
</table>

**Glasgow Lunatic Asylum.**

<table>
<thead>
<tr>
<th>Asylum</th>
<th>Admitted.</th>
<th>Cured.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recent Cases,</td>
<td></td>
<td>50.00</td>
</tr>
<tr>
<td>Old Cases,</td>
<td></td>
<td>13.00 †</td>
</tr>
</tbody>
</table>

**Sex.**—This is not distinguished, except in the Bloomingdale and Connecticut Reports. They stand as follows:

* Burrow’s Inquiry into certain Errors relative to Insanity, p. 20.
† Edinburgh Review, Vol. XXVIII. p. 459. We refer those who are curious on this point, to the extensive tables in the works last quoted. As it would be improper to copy these in detail, we have only selected some of the more general results.
‡ Burrows, pages 281, 48, and 20.
In explanation of the great excess of males in the Bloomingdale Asylum, a fact mentioned to me by Dr. Williams of New-York, may be stated. It is, that in the Bellevue Hospital, where the pauper lunatics are confined, the females greatly exceed the males; and probably, if the gross amount of both establishments were taken, the difference would not be great. In Scotland, according to the returns made by the clergy of the established church, the respective numbers in 1818 were as follows:

Males, 2,311. Females, 2,339.

In the fifteen Asylums noticed in the Edinburgh Review, the proportion was,

6,765. 7,356.

Dr. Morison, in his late "Outlines of Lectures on Mental Diseases," states, that in Great Britain and France, there are more females insane than males.

**Mortality.**

<table>
<thead>
<tr>
<th>Asylum</th>
<th>Admissions</th>
<th>Deaths</th>
<th>Mortality Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>New-York Lunatic Asylum</td>
<td>1584</td>
<td>153</td>
<td>1 in 10.5</td>
</tr>
<tr>
<td>Bloomingdale Asylum</td>
<td>909</td>
<td>46</td>
<td>1 in 19.4</td>
</tr>
<tr>
<td>Connecticut</td>
<td>106</td>
<td>1</td>
<td>1 in 106</td>
</tr>
<tr>
<td>Friends' Asylum</td>
<td>158</td>
<td>21</td>
<td>1 in 7.5</td>
</tr>
</tbody>
</table>

According to Casper, the mortality at

York, - - is one in nine.
Manchester, - - one in nine.
Montrose, - - one in four.
Nottingham, - - one in eight.
Exeter, - - one in twelve.
At Aversa, - - one in four.
In Paris, - - one in thirteen.*
At Cork, - - one in three.

Proportion of Insane to the Whole Population of the State of New-York.—In a former article (New-York Medical and Physical Journal, Vol. V. p. 205) we mentioned the results obtained from the census of 1825. In a population amounting at that time to 1,616,458,

The number of Idiots was 1421
of Lunatics 819

2240

Or, 1 in 721.

In Scotland, the proportion is one in 400*
In Paris, one in 350
In England and Wales, one in 2000 (Burrows.)
In London, one in 600†

There can hardly be a question, that the estimate for Great Britain is too low; but even granting it to be the same with London, and thus making the result in our own state more favourable than in foreign countries, still the proportion is one that deserves the serious attention of every philanthropist and statesman. We have but one asylum incorporated by the government for the safe-keeping and management of upwards of 800 lunatics and 1400 idiots, and it has been the practice until very lately to confine many paupers of the above descriptions, either in county jails, or poor-houses, or in private dwellings.

In April 1827, an act was passed by the legislature, forbidding the confinement of any lunatic or idiot in a prison or house of correction; nor is it even permitted to confine in this way a person furiously mad. High penalties are prescribed for violating the law. The utility of these enactments is already witnessed. In the county of Albany, commodious

† Casper.
apartments, separated from the main body of the alms-house, have been completed for its pauper insane, and by an act passed in March of this year, the county of Washington is allowed to raise a certain sum of money for the erection of such additional buildings as may be deemed necessary and proper for the idiot and lunatic paupers.

Our commendation must, however, end in an acknowledgment of the increased attention paid by the legislature to the proper safe-keeping of this unfortunate class of beings. The system itself is radically defective. It does not make the requisite provision for their cure—it is far from effecting the necessary confinement—it does not sufficiently guard the public from the consequences of furious madness—and finally, it is the most expensive mode of providing for them. The experiment has been tried on a large scale in Great Britain, and to condemn it, I need only refer to the tales of horror and of misery developed by an investigation into the condition of lunatics in county poor-houses.

It is evident that the most humane, the most efficient, as well as the most economical plan would be, for the state to erect in its various great divisions, extensive lunatic asylums, provided with proper medical attendance, and all the safeguards so essential both to the patients and the public. Let these be increased, if the increase of the malady demands it. The burden of their support will fall equally upon all; the success of their treatment which we might reasonably anticipate, would leave vacancies for new cases; and instead of merely, (as at present,) keeping them in custody, to wear out a miserable existence, new trophies might be gained for the medical art, and many valuable citizens restored to their families and the community.

New-York, June 1828.

Dear Sir,

In conversation a few days ago, I promised to furnish you with such facts on the respiration of cool air in pulmonary diseases, as I have been enabled to collect since the publication of my letter to Dr. Smith, in the last number of the American Journal of the Medical and Physical Sciences.

I have employed the remedy in more than twenty additional cases, and in general with effects that encourage me to pursue the investigation. The greater part of these cases were obstinate chronic coughs, that had resisted the routine of ordinary treatment. Some of them had been preceded or attended with pulmonary hemorrhagy, were accompanied with more or less pain or sense of soreness in the thoracic region, with expectoration, and other indications of pulmonary derangement. A part of these might even be considered as cases of incipient phthisis, exhibiting slight and irregular paroxysms of hectic; although the degree of febrile excitement was not considerable in any of them. In all such cases the remedy has invariably stilled the cough, and rendered the expectoration freer and easier: but where the febrile excitement was greater, with serious derangement of the respiratory function and debility of the patient, I have not been so successful. This I attribute, in a great measure, to the labour and fatigue incident to the mode of respiration. At any rate, in two cases of what may be denominated acute phthisis following severe attacks of pneumony, where the pulse was 120 or 130, weak and small, the respiration quick, laboured, and short, with other symptoms of great prostration, I was unable to reduce the frequency of the pulse by the respiration of cool air, although in one case it abated the cough and caused the patient to expectorate with more facility; still, on the whole, I was rather of opinion that it was injurious in both cases,
by producing a state of fatigue and exhaustion which they were not able to endure, and I abandoned its further use from an apprehension that the mode of respiration was not adapted to their peculiar condition.

Trials were made of the remedy in three cases of advanced phthisis; but I need hardly add, without doing more than merely aiding the expectoration, when the patients could be induced to continue it sufficiently long, which was difficult to do, for they complained that they had not force to draw in the air.

In two additional cases of asthma, I succeeded in shortening the paroxysms and in bringing the respiration to its ordinary state in a short time. Whatever objections may be urged against the remedy in pulmonic inflammations, I have no doubt that in very many cases of this disease, it will soon be admitted to be a most valuable means of relief.

I am now in the habit of reducing the temperature of the air much lower than formerly. In some instances I have brought it a few degrees below zero, and always endeavour to bring it as low as 32°. By reducing it very low, its respiration is more agreeable to the patient, and he is not obliged to continue its application so long for a given effect. In general, an hour thrice in the twenty-four hours will be found sufficient: when carried much beyond that extent, it is liable to produce fatigue, and perhaps stimulate from the mere muscular exertion. Doubtless from long use, patients will learn to breathe through a tube with almost as little exertion, as they take in the air in ordinary respiration. Such facility is greatly to be desired, and remains a desideratum as I have employed the remedy.

The effect of cool respiration on the pulse, although not always the same, is on the whole confirmatory of the sedative character of the remedy. Very generally the pulse was reduced in frequency, sometimes as much as 20 or 25 pulsations, provided it was not much above a hundred. I had only two cases in which the pulse was as high as 120; but in these, as I have before observed, I could not find that it produced any reduction.
The apparatus I employ to cool the air is made of tin or zinc, and is placed in a wooden vessel somewhat larger than it, to exclude the external heat, or otherwise enveloped in a layer of charcoal. When I wish to reduce the air below 32°, common salt is mixed with the pounded ice.

The following instance will show the opinion a common observer formed of the efficacy of the remedy on others, and also its beneficial effects in his own person, under circumstances that seemed to forbid its use. A remarkably stout, athletic man, labouring under hemiplegy, with symptoms of cerebral determination and high vascular excitement, was seized in February last, with severe and harassing cough, which was soon attended with copious expectoration, without affording any relief to the pulmonic irritation. The ordinary remedies were employed without benefit, and the man's vigorous habit began to waste under the almost constant cough and copious expectoration. Placed in the room that was appropriated to the cases that were using the cool air, he had constant opportunities of witnessing its effects on others; and finding that his own treatment was doing him no good, he begged that I would allow him to use the cool air also. I explained to him the danger of the remedy in his case; for he had been more than once in the course of the winter threatened with apoplexy, but proposed to give him the advantage of the same means in a modified form, and in a way that would obviate the danger I apprehended.

The weather of last March being remarkably mild and pleasant, I had this man well wrapped in blankets and placed in the open air every clear day, exposed to the influences of the south or west breeze for two or three hours. On returning him to his bed and covering him warmly, a tumbler of milk or water, made very cold, was given him in order to produce a gentle glow on the surface. In the course of a few days, I observed that his cough began to abate, and his expectoration to diminish; and he finally perfectly recovered from his pulmonary affection.

This man's recovery I attributed to the means I employed, but it seems I was mistaken; for a short time before he was
Drake on the respiration of cool air.

removed to the Sing-sing prison, in May last, he confessed to me that he had managed in the night, when the other patients in the room were asleep, to reach the tube of a refrigerator that was near his bed, and that he had used the remedy faithfully every night, sleeping for the most part during the day, until he became entirely cured of his cough. Still I am of opinion, that the exposure to the open air, and the ingestion of the cold fluids, were not without their good effects. Their remedial influences merit from physicians a more serious consideration than they have heretofore received. Much of the benefit derived in chronic pulmonary disease from travel may be justly attributed to the patient breathing a fresher, stronger air, as the vulgar term it, than he is ordinarily accustomed to, while his cutaneous surface and the muscular system, are maintained in a state of gentle excitement by the constant and moderate exercise. I experienced a few years ago in my own person, great advantage in a chronic pituitous catarrh, from riding in the midst of winter, exposed the whole day to a severe north-west wind, only observing to keep myself warm by much extra clothing. It is true, that the air in this instance, besides being very cold and dry, was also free from the impregnation of saline particles, which contributes doubtless to render the locality of this city so inimical to phthisical patients. In confirmation of the idea, that even intense cold is favourable to the healthy condition of the respiratory organ, provided the body be kept warmly clad, I will cite the remarkable exemption from pulmonary affections of Captain Parry's company, consisting of ninety-four men, in 1819 and 1820, when they wintered in the Polar Sea; only one pulmonary case occurring, and that in a constitution previously impaired, besides being scorbutic; and also the authority of Sir A. Crichton, that phthisis pulmonalis is by no means so frequent in the northern parts of Russia as in Great Britain. On the other hand, that warm and temperate climates, liable to even moderate transitions of temperature, will not procure immunity from pulmonary disease, we have the testimony of writers on southern regions. Dr. Chisholm says, that phthisis is by no means a rare disease in the West Indian islands.
Drake on the respiration of cool air.

He thinks it is caused by the variable state of the weather, though the degree of cold is never considerable, but lays no stress on the influence of sea air. Dr. James Clark coincides with him in accounting for its great frequency in many of the southern parts of Europe from the same cause. Fodéré, and I think with great truth, attributes its prevalence on the shores of the Mediterranean, to the air imbibing muriatic salts from the sea. Admitting then with Fodéré, and other respectable authority that might be quoted, that the air on the sea-shore is invariably prejudicial in phthisis, it becomes a curious and interesting subject of inquiry, to ascertain in what such air differs from the air on mid-ocean, seeing that phthisical cases are so frequently benefited by sea voyages: Or do the good effects arise indirectly from the action induced on the other organs, notwithstanding the prejudicial influence of the sea air on the lungs?

I have heretofore noticed only the temperature of the inhaled air, but it must be evident to every one the least acquainted with these subjects, that the air becomes drier as its temperature is reduced: a condition universally allowed to be favourable to the healthy condition of the pulmonary organ.

These few remarks, which I have been incidentally led to make, require to be much extended and enforced by additional facts, to give the doctrine inculcated, that degree of proof which I believe it to be susceptible of receiving; and it is my intention at some future day, of returning to the subject, when I hope to elucidate my pathological views in a more satisfactory manner than my present means allow.

Respectfully,  

C. Drake.

Dr. Peixotto.

The following is the communication alluded to in the foregoing. It is an extract of a letter from Dr. Drake to Dr. J. R. Smith of Philadelphia.

"I have no medical intelligence to give you, except it be a plan I have devised for the treatment of pulmonary diseases,
It consists in causing the patient to breathe cool air, while the cutaneous surface is maintained in a state of preternatural excitement, by placing him warm in bed, or by enveloping his thorax with some stimulant application. I was led to the adoption of this means, by reflecting on the laws of sympathy, as inculcated by M. Broussais. That eminent physician contends, as you well know, that the sympathies between the skin and mucous membrane of the primæ vīæ are direct—that the stimulations of the one are directly repeated in the other; and he hence disapproves of the employment of blisters and other irritating applications to the abdomen, in gastritis, enteritis, &c. On the other hand, he says, that the sympathies between the skin and the mucous membrane of the lungs are reversed—whatever debilitates the former, and repels the blood from its texture, tends to irritate the latter, and produce a sanguineous congestion in the pulmonary organ, a preliminary condition of inflammation. If such be the case, one would naturally suppose that a rational mode of treating pulmonary inflammation, would be, to place the system as far as possible, in a condition the reverse of that which has produced the disease. I have accordingly submitted the plan to actual trial in a number of cases in the state prison of this city, and the beneficial effects that I have uniformly obtained, render me somewhat sanguine of the value of the remedy. I do not believe that it can be solely depended upon in the treatment of acute inflammations, but conjoined with other antiphlogistic means, it may become a powerful auxiliary. Neither do I expect it will prove a remedy for phthisis pulmonalis; for by the time the disease commonly receives this fatal appellation, the pulmonary tissue is so deeply altered and ruined, as to place the disease in very many cases beyond the control of medical agents; but I think it will be found to be of signal service in the early stages of these chronic inflammations. Surely, by creating a general revulsion to the external parts of the system, by means of external heat or other stimuli, and at the same time directly introducing into the inflamed lungs cold, which by its sedative properties is so efficient in allaying inflammatory
irritation, and repelling the preternatural flow of blood from inflamed parts, we place the pulmonary organ in a condition well calculated to enable it to throw off the morbid action, and regain its healthy tone and functions. But facts are doubtless better than reasonings on this subject, and I will proceed to relate to you the way in which I submitted my patients to a trial of the remedy, and the results I have obtained from it.

"In order to excite and maintain the action on the surface of the body, the chest was enveloped in a vest padded with wool and lined with fur, and the patient covered warm in bed, or he was placed in a bath heated to 98°, and in this situation caused to inspire, through a tube, cool air brought from the external atmosphere, when the weather was sufficiently cold; otherwise, drawn from a reservoir in which it was cooled to about 40° of temperature, by means of ice. The operation was usually directed to be continued one hour, and repeated thrice a day; but the patients were frequently induced, from the benefits they thought they derived from it, to continue it much longer and to repeat it more frequently. They did not seem to receive any greater advantages from the warm bath than from the other mode of exciting external heat, and as its use was attended with much inconvenience, I have of late seldom employed it. The uncommon mildness of the past winter prevented me from using air lower than 25° of temperature, which of course was raised a few degrees higher by the time it reached the mouth. None of the patients complained of such air being too cold. I found that when its temperature was not higher than 50°, it seemed to make a decided impression, and that about 40° is the temperature that answers the desired purpose very well. I have accordingly of late brought the air to that point; and, from many trials, have no doubt that from four to six quarts of ice, even in summer, will cool a sufficient quantity for a day's consumption.

"It is, I think, during the hot season, when the skin is constantly kept in an excited state, and the other secretory organs are in full play, that the remedy promises to be of
more advantage in chronic inflammations than it can possibly be during the cold and variable weather of winter.

"The sensible effects produced by the remedy were tolerably uniform. When the temperature of the inspired air was not above 50° it invariably produced an agreeable sensation of coolness in the chest, occasionally with darting pains extending to the shoulders, which the patients referred to the external and muscular parts. On persisting in the use of the remedy for a long time and repeating it frequently, they sometimes complained of a sense of soreness and fatigue in the direction of the diaphragm, and sometimes also of fulness of the head and vertigo. The most constant effect on the pulse was to render it fuller: when it was preternaturally frequent, it commonly rendered slower; in some instances diminishing it ten to twenty pulsations in a minute; in a few cases, however, especially where it was rather slow, it rendered it somewhat more frequent. It very generally mitigated the cough, diminishing its frequency more than one-half in the course of two or three days, and rendered the expectoration freer and easier, so that the patient would frequently throw it up almost without effort. The effects on the cutaneous function were not less decided: it diminished the morbid heat, and rendered the skin more pliable and pleasant to the feel. The patients that used the remedy to any extent complained continually of great hunger, and it was with difficulty that I restrained them to a moderate allowance of vegetable food.

"Heretofore, in order to give the remedy a fair trial, I have employed it unaided by other means than the observance of low diet, and the benefits resulting have been too uniform and decided to be merely accidental. In one recent case of catarrh, it completely removed the affection in twenty-four hours. In all the old pulmonary cases it has greatly alleviated the disease; and notwithstanding the unfavourable circumstances under which these patients are placed, it still seems to be rendering them service. In one case where the cough was almost incessant, I succeeded, in a few days, in allaying it so much as to enable the patient to sleep quietly all night, and his cough is now comparatively rare and trifling."
In two cases of asthma, of many years' standing, the patients acknowledged that the remedy had afforded them more relief than any other means they had employed. The fulness of the pulse, the muscular pains, and the affection of the head, appear to indicate that the blood is diverted from the thoracic organ, and accumulated in other parts of the body. If such be the case, small and repeated venesections would render the effects of the revulsion from the lungs more permanent, and materially aid in removing the chronic engorgements.

"Dr. Binse, the resident physician of the prison, has attended to the administration of the remedy, and taken copious notes of the progress of the cases, which I shall at some future day condense for publication."

Art. IV. Description of a new Stop-cock for Gum-elastic Hydrocele Bags and for the Stomach-pump. By Alexander H. Stevens, M.D.

The gum-elastic bag with the common stop-cock, which is commonly employed by the English and American surgeons, is a much neater instrument for throwing an injection into the tunica vaginalis than the syringe, which is, or was, not many years since, used by the French surgeons. Every one who has practised with this instrument, must have depended upon an assistant to close the stop-cock at the moment when he had pressed the contents of the bag into the cavity of the tunica vaginalis, and again to change it when he was about to throw in another bagful. I have seen the surgeon turning the cock with his right hand relax the pressure on the bag, the result of which was, that the injection was partially drawn back.

I have seen the left hand, by which the canula should be kept steady in its place, applied to the handle of the stop-cock, and the end of the canula, by this means, slip out of the cavity of the tunica vaginalis, and upon being pushed up, it was thrust into the cellular membrane, which in consequence received the injection; an accident which it is well known is invariably followed by extensive sloughing.

The stop-cock which I offer to the notice of the profession,
in contriving which I have been assisted by my late ingenious pupil, Dr. I. Dwight Harris, is very simple in its construction, cheap and portable, and it is calculated to obviate all the defects I have mentioned as appertaining to the ordinary stop-cock. I cannot more briefly describe it than to say, it is a simple pipe, one end of which is fitted to the canula of the trocar, the other and larger end receives another pipe closed at the end which enters the smaller pipe, but having an aperture on one side; the second pipe or hollow cylinder is attached to the gum-elastic bag, and turns within the first. A small groove in the first pipe or a semi-diameter of a very small circle affords a passage to fluids when the hole in the second pipe is turned so as to correspond with the groove in the first; at other times it is closed. Thus the two hands of the operator perform the three steps in throwing in the injection, viz. keeping the canula in place, maintaining a continued pressure on the bag, and closing the stop-cock, which last is effected simply by turning the bag slightly in its long axis. The annexed plate will render more intelligible the structure and management of this instrument.

A, the gum elastic bag, with a brass pipe terminating in a round end fitted to the canula, and having a square shoulder, fitted to a square opening in F, the internal structure of which is shown in figures C and D, except that it wants the lateral pipes of the stomach syringe.

In showing the surgical class the method of removing poisons from the stomach, in the session of 1826 and 7, the experiment was partially foiled by the eyes of the gum-elastic tube becoming stopped up by portions of solid food. To obviate the occurrence of this accident, I had the tube cut off above the eyes, and a perforated hollow ivory ball about half an inch in diameter firmly attached to it.

But the greatest objections to the apparatus for extracting poisons is, that the use of it requires the hands of an assistant as well as of a surgeon. To make this apparatus perfect, it should be made to effect three objects; 1st, To throw a diluting liquid into the stomach; 2d, To remove that liquid with the poisonous matters mixed with it; 3d, To discharge
Stevens on Hydrocele Bags and Stomach-pump.

this mixture without removing the pipe from the gum-elastic tube, and without the necessity of employing an intelligent assistant. These objects seem to be attained in the instrument represented in the annexed engraving.

In using the stomach syringe, the lower cap formed by D, inserted into C, is kept steady by the left hand of the operator, whose right hand embraces the piston handle. By supinating the right hand, the piston rod and syringe are turned, and the aperture at D is brought opposite to the right hand tube at C, and the syringe is worked until it is filled with the material to be injected into the stomach. Now the piston rod is to be turned again, until the screw in B is in the middle of the groove, in which it moves on directly upward. Thus the syringe communicates with the stomach, and by another slight turn of the piston may be made to discharge itself through the left hand pipe.
Art. V. A Dissertation on the Uniform Action of the Absorbents.
By the late Cornelius E. De Puy, M. D.* of New-York.

That the action of the absorbents continues uniform throughout every stage of life, and in every condition of the body, whether of health or disease, unless when mechanically interrupted, appears to be almost a necessary consequence to their comparative insulated state, and the independent manner in which they perform their functions. This opinion, which is warranted by an exclusive attention to the nature of the absorbent system, acquires support from a connected view as well as from a detailed examination, of the natural and healthy operation of the other functions of the body; and receives confirmation from the light which the phenomena of diseases shed on the inquiry.

Those who are accustomed to consider the absorbents as the seat of some of the most common diseases, and who daily administer medicines with a view to accelerate their action, and with apparent effect, may at once reject a doctrine as untenable, which appears to be so palpably contradicted by some of the most familiar facts that the practice of medicine offers to common observation. But it is not unusual in medicine for error to assume the garb of truth so speciously as to elude detection, even though it be subjected to daily observation. Perhaps the result of an honest inquiry into the very circumstances which may be objected, and a fair explanation of them, will serve to establish the doctrine against which they may at first appear to militate.

* The melancholy fate of the author of this paper is familiar to most of our readers. The particulars concerning it were detailed in a biographical notice published in the 14th No. of this Journal. The present paper first appeared a few years before his death, but as it is believed that the circulation of it has been rather limited, it is here republished, to gratify the wishes of a number of the surviving friends of the deceased. Whatever opinion may be formed in relation to the doctrines advanced in this production, our readers will have no hesitation to concur with us in awarding to it the meed of talent and ingenuity.
In the progress of the subsequent attempt to prove the Uniform Action of the Absorbents, I shall have frequent occasion to advert to the circulation; and sometimes to infer necessary consequences respecting the nature of the absorbents, from known facts and familiar occurrences which we observe in the action of the blood-vessels. It will therefore be particularly interesting to contrast such peculiarities in those two systems of vessels, as have a more immediate relation to the object of this inquiry; it will show the distinct character of each, and also give a concise and comprehensive view of the fundamental principles on which we intend to rest the doctrine to be supported.

It is well known that the respective offices of these organs are as opposite as they are distinct; that it is the constant exertion of the one to remove that supply which is deposited by the other, in order to repair the waste of its antagonist. But, in examining the circumstances which actually occur, and, in tracing the consequences which would inevitably ensue from a different regulation, we are almost irresistibly led to infer, that the wasting process continues stationary at a certain point of action; and that the vessels by which it is accomplished, must not only be constantly in exercise, but also undeviating and uniform in their operation. This opinion acquires plausibility from a number of proofs, both direct and collateral, which warrant the position, that the absorbents are so singularly constituted, as to be actually incapable of being either accelerated or retarded.

On the contrary, we know that the blood-vessels possess a susceptibility, which gives them a range of action between the two extremes, which occasion mortification from excessive excitement on the one hand, and from direct debility on the other; which also renders them the chief agents in effecting the changes that we observe in the body; and in producing the variety of effects which we know it to suffer.

Both are endowed with that inherent vital energy which nature has originally diffused throughout the animal system. This *vis insita*, as it has been aptly termed, is adapted to the peculiar constitution of each, so as to subserve the different
purposes for which they were intended: its degree is doubtless so proportioned, in each, as to constitute a relative equilibrium; that in the performance of their particular functions, the relative action of both might be consistent with that characteristic temperament of the body, which results from the collective operation of all its powers; and that their individual functions, though distinct, might yet harmonize in the general economy of the animal machine.

But the principle of irritability, in whatever it may consist, appears to be so modified in the circulatory vessels, as to render them susceptible of being excited by a variety of other agents than their internal, and truly natural stimulus, the blood; such as the nervous influence, passions, caloric and the numerous class of medicines termed stimulants. This additional susceptibility renders the circulation the chief index by which we judge of the operation of these external agents on the system in general. Consequently, as all the other organs (the absorbents excepted) are directly, though more or less remotely, under the control of the circulation, they must also be disturbed, proportionally to their dependence, by the variations to which it is constantly exposed.

The absorbents, on the contrary, in the performance of their functions, have no immediate dependence on the circulation, excepting what is necessary for simple attachment at their termination, nor any intimate connexion with the minor organs. The other powers are successively put into action by the direct impetus of the heart and arteries; but the absorbents have a distinct source of independent motion within themselves. Equally callous to the impression of every external stimulant, and superior to the action of the most powerful narcotic, they imbibe in, perhaps, a peculiar and inexplicable manner, whatever comes in contact with their mouths: re-acting only to the mechanical stimulus of their contents, they propel what is thus absorbed, by their own inherent power, unsupported by any vis a tergo, and unassisted by that reciprocal aid and common consent, by which the other organs maintain their usual balance, and correct their occasional irregularities. Though they derive their materials of growth
from the circulation, and are supposed to be partially supplied with nerves, still they are not invigorated by the one nor stimulated by the other; for they steadily continue their action after the cessation of both. The heart may be the primum mobile of the system, but the mouths of the absorbents are its true ultimum moriens—vitality continues its vibrations there, after its quiverings have ceased in every other part of the body.*

Thus excluded from the ordinary participations of the system, they uninterruptedly continue their operations, both in health and disease, in excitement or debility, and at every period of life, so that they may be considered an exception to that general rule, which has established a correlative dependence, and an unanimity of action between the other parts of the system. Left to be governed by their own laws, they steadily pursue their uniform course, undisturbed by vascular irregularities, and unaffected by nervous sympathies, amidst all the commotions which frequently confuse the other operations of the body, and, sometimes, irretrievably destroy the harmony of its powers; nor do they droop in its languor, or participate in its debility, whether exhausted by fatigue, enervated by excess, or prostrated by disease: the life which they possess within themselves, maintains its ascendancy over

* Dissectors, on opening the body, have observed the lacteals, which were at first apparent, to contract and disappear: they are particularly found to be distended if an animal dies, or is killed, shortly after a full meal.

See subsequent proofs that the absorbents are exempted from the agency of external causes.

Hunter relates a case of dropsy, where the patient was 24 hours dying; when the extremities had become cold, the swelling began to subside, the urine to increase, and by the time the patient was dead, the absorbents had reduced them to their natural dimensions.—See Hunter on Inflammation.

"They (absorbents) continue to receive and transmit their fluids after the heart and arteries have ceased to beat, and the red blood to circulate..." after the death of the animal, and after the phenomena of life have ceased."—C. Bell.

"Even after death, they (lacteals) expel the chyle."—Haller.

Query—Are not dropsical swellings always sensibly diminished after the heart and arteries have ceased to act? Is the thoracic duct always found, on dissection, to be distended?
the death of the body, till, probably, they are killed by the poisonous quality of its dissolving materials. As a component part of the system, they must ultimately yield to the disorganization and confusion which ensues after death: their energy and structure cannot resist chemical affinity; when it has acquired sufficient power to separate the elementary principles of the animal fibre; and the period of the cessation of their action might probably be fixed at that moment when sphacelus attacks a living part, or putrefaction commences in the dead body.

In stating that the absorbents are only obedient to the stimulus of their natural contents, it was not intended to convey the idea that their re-action depends on any stimulating quality of the chyle and lymph. It is more probably produced, and regularly perpetuated, by the bulk of these fluids, operating mechanically on the coats of the lacteals and lymphatics, which contract to the stimulus of distention. The capacity of the absorbents is limited to the natural diameter of their tubes, and this is fixed by the unyielding structure of their coats and restraining valves; therefore, the exciting power of distention cannot be made to exceed that determined elevation. But the quantity of fluid in these vessels may be, and often is, less than the capability of their canals to contain; still, as no other stimulus can interfere with that of distention, their contraction must remain uniform as to frequency, though it is variable as to force; for the power exerted is in proportion to the bulk of the distending fluid, which, therefore, in both instances, is propelled with an equal velocity.

It was remarked, that the particular mode of action, by which substances are imbibed at the extremities of the absorbents, is probably peculiar, and perhaps inexplicable.

It has occupied the attention and divided the opinions of eminent physiologists. Want of observation, and perhaps difficulties arising from the very nature of the subject, render any opinion respecting it hazardous; for though plausible, still it must chiefly rest on conjecture. The most prevalent doctrine, at present, attributes absorption to a living action of, what is called, the mouths of the absorbents; but although
the alternate contraction and dilatation, which this hypothesis implies, could be proved to exist, yet it would be inadequate to the effect. It supposes the fluid to rush into the expanded mouths by its gravity; but the lymph could not thus enter the extremities of those absorbents which ascend perpendicularly from the upper part of the cellular cavities, without the assistance of such a contractile or elastic power of the cellular membrane, as does not exist.

Several circumstances accompanying, and consequent to the process of absorption, together with some concurring facts in physiology in general, seem to favour the exploded doctrine of capillary attraction. Though it has been satisfactorily proved, that this principle cannot be applied to the whole extent of the absorbent canals, yet the philosophical objections are by no means decisive against its limited application to the extremities of those vessels, leaving the fluid, after being absorbed, to be propelled by an inherent, and, what remains to be proved, an independent muscularity. The structure of these radicles, to which alone the term absorbent is justly applicable, appears favourable to the supposition of their intrinsic action. They are composed of very minute and truly capillary tubes,—which soon become enlarged, or rather terminate in the more expanded canal of the main vessel,—where its muscular, or elastic contraction may be supposed to commence. In this respect, they are analogous to the termination of the tubes leading from the puncta lachrymalia to the lachrymal sac. As the action of these puncta must, at least, resemble that of the absorbents, the most obvious effects of the former may assist us in our conclusions respecting the nature of the latter. If the tears were imbibed by a vital action, we should observe a constant motion in the puncta; for alternate dilatation and contraction are the only living efforts by which a fluid can be successively admitted into and propelled by a hollow muscle; we should, therefore, perceive them to open and close in regular succession; because it is required that the impulsive contraction should commence at the surface, or the fluid would necessarily regurgitate at the extremity of the canal. But it is well known that the openings of these puncta
are permanently expanded during life, except when (as in introducing Anel's syringe) they are occasionally closed by the surrounding muscular fibres, with which they are evidently supplied to prevent obstruction, to which their exposed situation renders them constantly liable. The weight of the fluid may facilitate its descent through the opening into the lower lid, but no "successive effort of the columns" (Richerand) could enable it to ascend into the superior punctum. To say that "the tears are taken up by a real process of suction," (ibid) is, at best, a very enigmatical explanation. If then capillary attraction is required to explain the phenomena of lachrymal absorption, we may, by referring identical effects to similar causes, deduce from it a just analogical inference respecting the nature of absorption in general.

It may be objected, that the mouths of the absorbents give preference to certain substances in exclusion to others, which are in contact with them at the same time. But the objection itself is too questionable to be admitted as proof against the validity of the doctrine. Instead of that fastidiousness which is so generally, but perhaps gratuitously, attributed to the absorbents, it appears that they take up substances of equal fluidity, with the same expedition, whether they are offered to them separately or in combination. A mixture of various ingredients, of equal solubility, is imbibed without any evidences of an active intelligence, or instinctive impulse in the selection. Acrid medicines are absorbed by the lacteals together with the bland nutriment; and poisons are admitted, by the cutaneous lymphatics, in company with water. The apparent partiality of the lacteals for chyle, and supposed antipathy to faecal dross, are simply the consequences of the first being composed of that part of the food which is most readily and completely dissolved in the fluids of the stomach, and therefore most easily imbibed. They do not select the chyle from amongst the fluids which the exhalents pour into the intestines, during the operation of cathartics, for it is sometimes distinctly discovered in the faeces. When the contents of the primæ vie become vitiated, in consequence of improper diet, or a disordered state of the stomach and bowels, the matter, notwithstanding,
is absorbed; and often in such quantity as to disturb the system, and even contaminate the whole mass of fluids, as in typhus. In all these instances, instead of any nervous attachments and antipathies, they evince a remarkable indifference and insensibility. The selection of any liquid appears to depend rather on its comparative fluidity, than the exercise of a discriminating choice on the part of the vessels; hence water is sooner taken into the system than any of the fluids that are ordinarily drank. And it is a remarkable coincident fact, that water, according to Martin's philosophical experiments, ascends capillary tubes to a greater height than milk, bile, urine, or any other fluid. This, together with "the exceeding great velocity of capillary attraction," (Martin) at the end of the tube immersed, accounts for the speedy removal of repeated large draughts of water from the stomach; and also for the apparent increased absorption when it is injected into the urinary bladder, as in the experiment of Bedingfield. (Compendium, p. 242.)

The tenuity* of the substance absorbed appears to influence the quantity removed; which is also in some degree increased when the stomach, bladder, and cellular interstices contain sufficient fluids to maintain a constant plenitude in the absorbent tubes; hence the body acquires weight when exposed to a damp air, and especially when it is immersed in water. But these advantages only facilitate the labour, without accelerating the action of the absorbents, or the progressive advancement of the fluids they convey; therefore, these changes, in the result, can neither controvert nor invalidate the proofs that will be adduced in favour of their uniformity.

The condition of the substance acted on is then to be regarded as the cause of occasional variations in the result of the process. The subsequent examination will show, that this principle can also be applied to the removal of the living so-

* This is intended as a general rule. It would be difficult to ascertain, whether alcoholic liquors also constitute an exception in animal absorption as they do in the attraction of capillary tubes.
lids of the body; that it affords a satisfactory explanation of every apparent irregularity in the absorbent vessels, which cannot be attributed to changes and alterations in their action, without admitting irreconcileable contradictions in what may be termed the fundamental laws of the animal economy, and thus create confusion in the grand scale of operation.

The principal proofs of the doctrine, of which a general statement has been given, require more minute investigation. It will be sufficient to particularize a few of those familiar occurrences which most strikingly indicate that impassive nature and independent action of the absorbents, which enable them to maintain the uniformity they constantly evince.*

When the body is excited by violent exercise, from exposure to high temperature, the use of alcoholic or other medicinal stimulants, and also during a paroxysm of anger, we observe a bloated state of the surface and soft parts beneath. This could not occur if the lymphatics partook of the general excitement, for they would remove the interstitial exhalation, on which the tumid appearance in part depends, as rapidly as it is deposited. The lymphatics not only show an indifference to the agents of this excitement, by remaining unmoved during its violence, but also prove their superiority over the consequent languor; for as mildness of temper succeeds the turbulence

* The doctrine of the uniform action of the absorbents was accidentally suggested, and a number of plausible reasons at first concurred to invite a more particular inquiry. The original manuscript was written without referring to any author but I. Hunter, from whom objections were chiefly anticipated. The numerous facts and acute observations contained in his justly celebrated work on the blood, served, notwithstanding his conclusions to the contrary, to strengthen the opinion. In consulting the opinions of some writers, somewhat particularly, respecting absorption, I have since found that C. Bell suggests a similar idea, in his strictures on Hunter's doctrine: but his observations appear to be at least occasional, if not entirely dictated by opposition, which he seems to have regarded more than the consistency of his reasoning; for whilst he speaks of the probable uniform action of those vessels, he allows them to be subject to the agency of external causes, whereas the doctrine can only be predicated on their impassive nature.
of rage, and as sure as a storm of the elements is followed by a calm, so must vascular action subside as far below its ordinary standard, as it was previously excited beyond; and the reflux is attended by a proportionally less quantity of exhalent secretion. This gives an advantage to the uniform absorbents, and enables them to remove the unusual deposite, by their continued action, and reduce the body to its ordinary dimensions, by the time the circulation has recovered its former tone.

How could the application of a blister, or boiling water, produce vesication, if the cantharides and caloric irritated the extremities of both the lymphatics and exhalents? Would not the increased action of the one remove the redundant secretion of the other? And is not the fact, that the cuticle becomes separated and distended, a convincing evidence that the former is insensible to both? If drastic purgatives also irritated the mouths of the absorbents, would not the latter carry off the extraordinary secretion which the exhalents pour into the intestines, and thus prevent the liquid discharges per anum? The experiments in these instances are perfectly fair. The irritating substances are equally applied to both vessels at the same time and under the same circumstances: the result clearly and decidedly manifests the dissimilarity of character for which we are contending.

The above instances, which embrace some of the most active and diffusible stimuli, and also some of the most powerful external irritants, prove that the absorbents are insensible to the action of stimulants.* But they also appear to be superior to the operation of depressing causes, even the most deadly narcotics.

When opium, or any other vegetable poison, is conveyed into the system from the stomach or surface, the absorbents are

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* Haller supposes the absorbents to be excitable by chemical stimuli, because they shrink on the application of sulphuric acid; but this more probably is the effect of the constringing quality of the acid, which it equally exerts on dry leather and on the living fibre.—Elements Phys. Lib. II. Sec. iii. (iii.)
not only first exposed to their paralyzing effect, but have also to sustain the attack of their concentrated powers, for they are less diluted than after they have been diffused through the mass of fluids in the circulation, yet these vessels persist in conveying them after they have stupidified every other organ, and suspended every other operation.

If the naked body be exposed to cold damp air, or immersed in cold water, the capillary blood-vessels soon become inactive and benumbed, but the increase of weight which the body, according to statistical inquirers, continues to acquire, evinces that the cutaneous lymphatics persevere in their usual operation; and that they are not more affected in consequence of the abstraction, than from the increase of caloric.

The torpid effects of moisture, on the exhalents, is favoured during sleep by the calm, and somewhat languid action of the blood-vessels, and the body in that state acquires weight, though the quantity added by the lymphatics, is the same as when awake; because more is retained than during the exercise of the day; and hence absorption is erroneously supposed to be increased in the night.

The blood-vessels of a paralyzed limb lose their natural vigour, though they continue their action; but its progressive emaciation plainly shows that the strength of its lymphatics remains unimpaired. The different causes of every species of emaciation concur to lessen nutrition, whilst the existing animalized substance is proportionally diminished by the ordinary action of the absorbents. The consequent waste, which, on a superficial examination, appears to be owing to a morbid increase of their action, is only the effect of their unwearied diligence; and proves, that they do not suffer from that general debility, which is frequently the cause, and always the effect, of atrophy.

When the body is reduced to an extreme degree of debility by typhus fever; when a few feeble and indistinct efforts of life are the only remaining evidences of its existence; it is then that the practical physician acknowledges the independent nature and uniform action of the absorbents, by his solicitude to keep the bowels clear and skin clean, that these
vessels may have no opportunity to aggravate an evil from which they alone are exempted.

When death is actually progressing, and after every action of the skin has ceased, the cutaneous lymphatics still persevere in removing the thinner parts of the fluid, which exudes through its pores, and cause that clammy and adhesive quality of the matter which collects on the surface, and obscures the sight of the dying patient. It therefore appears to be as erroneous to speak of inactivity and torpor of the absorbents, as it is useless to attempt any direct means to promote their action.

The friction with which external applications are accompanied, to accelerate their absorption, only produce that effect by mechanically bringing the substance in closer contact with the mouths of the lymphatics, in consequence of pressing it between the scales of the cuticle; which promotes the facility of absorption, but not the activity of the absorbents. The cuticle impedes absorption in proportion to the mechanical obstruction it occasions; hence, ointments, &c. are more speedily removed from those places which are habitually moist; where the epidermis is the thinnest, and where it is accidentally abraded. But though there is a difference in the effect produced, yet the real capacity, and perhaps actual exertion of the absorbent mouths, (whatever may be their mode of operation,) may still remain the same over the whole surface; for it is manifest that the effect of the same power must vary if exerted under different disadvantages. Farther, if capillary attraction should be the mode by which fluids are made to ascend the minute extremities of absorbents in general, it is reasonable to suppose that they exert the same force in abstracting the moisture from more solid substances, as on the most perfect fluids; though a greater quantity is conveyed in this instance—minute division facilitates chemical action, yet the absolute affinity between bodies, containing equal quantities of matter, is the same in mass, as when reduced to atoms.

It may be objected to the impassive nature and uniform action of the absorbents, that they are subject to inflamma-
tion from animal poisons. But it is not improbable that the peculiarly virulent and subtle nature of these poisons, enable them to excite the surrounding nerves and blood-vessels, through the very thin and delicate coats of the absorbents, and thus inflame the parts in which these vessels are imbedded; and that the pain thereby produced, has been mistaken for an evidence that they are supplied with nerves. But suppose, that the absorbents are really inflamed, in this instance; it follows, that though they possess an increased tendency to act, yet their actions cannot be increased, in consequence of the turgid state of their coats from the injection of red blood.

The natural and healthy exercise of the animal functions furnish numerous proofs in support of the doctrine; and its physiological exposition is perhaps as novel as it is interesting. Without the prolixity of detail, it will be sufficient to examine the causes of the advancement of the body to maturity, and consequent decay; for however the particular actions of the different organs may vary, still the first is one of the grand results of their operation in assemblage;—the second a necessary consequence to the accomplishment of that object.

The progressive stages of life, from infancy to decrepitude; the growth of the body in youth; its stationary condition at manhood, and its gradual decline into old age, present familiar, but interesting appearances. In what manner is the balance of the absorbing and secreting vessels affected during the increase and waste of the body? Why do they acquire an alternate preponderance at different periods of life; and what causes the softness of texture in infancy, the firmness of fibre at manhood, and the rigidity of age? The vague references of physiologists to the activity, vigour, and languor of vascular action, without determining both the absolute and relative agency of each system of vessels concerned; their remote and indefinite allusions to cause and effect, leave the explanation of the phenomena as unsatisfactory, as if they had attributed them to the arbitrary result of pure necessity.

If the sanguiferous and absorbent systems both possessed the same degree of excitability, and were equally susceptible
of the impression of external stimulants, there would continually exist an equable balance of action between the vessels which supply and those which remove; the action of both would be equally excited, in the early part of life, and sink, pari passu, into its decline; therefore no increase of bulk could occur in the former stage, nor that gradual diminution of matter which happens in the latter; consequently, the size of the body would remain stationary throughout, and we never could emerge from the state of embryo. It is well known, that nourishment and growth is accomplished by the assimilating power of the blood-vessels, still I do not know how we are to avoid the above ridiculous conclusion, unless we admit that the impassive nature, and uniform action of the lymphatics give the circulation the necessary ascendancy. Grant this, and the process of animalization develops itself, with its whole train of consequences, and exhibits a more fair and definite character of some of those grand principles which form the basis of physiology.

The natural susceptibility and activity of youth give the assimilating organs the preponderance at this age: an increase of size is the consequence; but in order to proportion the different parts, so as to give symmetry to the whole, nature has conferred more or less activity on the blood-vessels of particular parts, together with the peculiarity of office which distinguishes each organ. As we approach the climacteric period of manhood, the mobility of the blood-vessels gradually settles into a more steady mode of action, in proportion as the system becomes less sensible to habitual impressions, and as the fibre acquires a denser structure and firmer tone. The less frequent, and more inconsiderable irregularities of the circulation, counterbalance each other, and leave a medium of action in unison with that of the absorbents. An equilibrium then exists between the two: the waste produced by the one is repaired by the additions brought by the other, and the quantity removed is equal to the supply. But the blood-vessels cannot maintain themselves at the equable standard of the absorbents; for subsequent debility must follow previous excitement—a law, in which the
animal body, with all nature, must acquiesce. The active exertions and rapid advancement of youth, as necessarily lead to the decline and imbecility of age, as subsequent languor is certain to follow the temporary exhilaration of ebriety: hence longevity is rare, where temperament or climate causes an early and rapid evolution of the organs; and speedy maturity, throughout all animated creation, denotes a short existence. Consequently, in advanced life the circulation begins to be enfeebled; many blood-vessels become impervious, and whole organs are gradually obliterated; digestion also becomes impaired, and nutrition is consequently imperfect; the circulation being incapable of supporting the peculiar secretion (Haller) of the lymphatic glands, these for want of excitement are often entirely removed; the uniform action of the lymphatics gives them a proportionate ascendancy; the more fluid part is first carried off; hence the solids become more dense, which again impedes the operation of the declining powers; the whole body shrinks, till the furrowed brow and wrinkled visage leave traces of a waste which the blood-vessels are unable to repair. Corpulency sometimes supervenes—"a kind of imitation of real growth." (Haller.) But the decrepitude of age, and the approach of natural death, are not retarded by this delusive appearance; the struggling energies of life, unequal to the burden, often yield the sooner to its pressure. The apparent effects of natural decay may also be obviated for a time by goading the blood-vessels to an extraordinary exertion by additional or more powerful stimulants; but the expedient only hastens exhaustion, and renders the body an earlier sacrifice to death. The duration of life, unless prematurely arrested, is limited to the established bounds of that original capacity with which nature has endowed the constitution; and its period will be shortened or protracted according to the profusion or economy with which we spend the determinate measure of inherent energy; though its enjoyments, like the transports of intoxication, may render us unconscious of its actual consumption, and regardless of the
The steady persistence of absorbent action is also remarkable in the disappearance of those parts which are only designed for temporary purposes, as the thymus gland, membrana pupillaris, alveolar processes, &c. The idea, that a new activity is conferred on the absorbents, for the removal of these parts, does not accord with the usual simplicity of nature. It supposes the blood-vessels to continue an useless labour; for the object may be more directly and expeditiously accomplished by diminishing the customary accretion. "Inutility, debility," &c. (Hunter,) are the assigned causes of such absorption. It is consistent with known laws, that such direct sedatives, as they must be, if their agency is not wholly ideal, should operate by paralyzing the nerves and impairing the action of the blood-vessels. But it requires an effort of credulity to suppose, that whilst they depress every other power, they at the same time stimulate the absorbents. This implies an effect directly opposed to their natural tendency—a contrariety of qualities, and a nature discordant with itself: or, a lawless disposition on the part of the absorbents, to act in direct opposition to principles which universally obtain in the organized fibre. In support of the probability of the first mode, and improbability of the second, it is only necessary to direct the attention to the abundant proofs, already advanced, that the absorbents are not under the immediate control, nor indirect influence of any accidental cause, whether of a depressing or an enlivening nature.

Pathology unites its testimony to the preceding facts, in favour of the doctrine. The causes, symptoms, and consequences of some of the most common diseases, unitedly point to the Uniform Action of the absorbents. If we regularly trace the progress of those diseases through their different stages, and then take a retrospective view of all their phenomena, in connexion with the sensible effects of the remedies usually administered, we find ourselves conducted to that conclusion, as if to an unavoidable and necessary result.— A brief examination of the nature and treatment of a few
of those diseases, in which the absorbents are supposed to be particularly and primarily concerned, will not only elucidate the doctrine, but also show the extensive pathological application of the principles it embraces.

The commencement, progress, and termination of what is termed healthy inflammation, are replete with facts illustrative of the subject in question. I will only direct the attention to a few of the most prominent. The exciting causes of inflammation are all stimulants, and sometimes excite such violent action in the blood-vessels as to disorganize the structure of the part affected. But the absorbents so completely resist the most intense and concentrated exertion of their power, that the calm and steady action of these vessels is not even noticed amidst an excess which transcends their fixed standard; hence the tumefaction, (so far as it depends on increased interstitial exhalation,) which their uniform action renders them unable to prevent. But when the strength of the blood-vessels is spent in the inordinate effort, and they are sinking into consequent indirect debility, it is then that the absorbent action becomes more or less apparent, according to the degree to which the circulation subsides below its healthy range.

The terminations of inflammation may truly be considered as indicative of the condition of the blood-vessels; therefore adhesion, suppuration, ulceration, and mortification, may with propriety be regarded as general terms, denoting different stages, and serving to express the strength which the circulation retains, or the debility to which it is reduced, without reference to any change in the mode, or increase of absorbent action. The progress of these terminations is accelerated or retarded, and the appearance of each is diversified by peculiarities of constitution, and by the interference of a variety of accidental causes, which it would be irrelevant to enumerate: the influence of which, on absorption, is to be estimated from their tendency to increase the debility of the blood-vessels. When the strength of the system or a part gradually fails, integrity of structure is maintained under the progress of absorption; as in general emaciation, the re-
moval of the thymus gland, &c.; but when vitality, from excessive action or any other violence, is speedily reduced to the verge of extinction, or becomes exhausted beyond the ability of the blood-vessels to furnish an adequate supply to preserve the organization of the part entire, then the progressive and unresisted depredations of the absorbents not only produce a diminution of bulk, but also an erosion and separation of parts: an ulcer is the consequence; which extends more rapidly, as the debility of the part approaches nearer to mortification. And when mortification actually occurs, the absorbents give new proofs of their unremitting perseverance in the speedy separation of the dead and living parts, as soon as the blood-vessels have acquired sufficient strength to arrest the progress of decomposition. It appears, therefore, improper to consider ulceration as "a substitute for mortification," (Hunter:) it only indicates an approach to that condition.

Hence it appears to be incorrect to employ the terms, progressive, interstitial, and ulcerative absorption, to designate a change of condition, or peculiarity of action in the absorbent system, since these different appearances are essentially imputable to a comparative deficiency in nutrition. The real state of the ulcerated part teaches, that the supposed increase of absorption is only apparent; that ulcerative absorption is not "a morbid process," (Thompson,) but a natural, and in itself, salutary action, apparently rendered morbid by the unhealthy condition of the part in which it is exerted; and that absorption, though the proximate, is not the morbid cause of ulceration. If increased absorption were the most efficient cause of ulceration, then the matter from an ulcerated surface would only vary as to its degree of consistence; but as there is an evident change in its quality, corresponding to the slower, or more rapid progress of the ulcer, it follows that the secreting exhalents are chiefly concerned in the diseased process.

The exciting causes of every species of ulceration which Hunter enumerates, have all a tendency to produce that debility which he admits to be "the basis of every other cause
of the removal of whole parts." It is on this account that parts most distant from the centre of circulation are most subject to ulceration; and that recent and adventitious formations are more liable to be absorbed, than those which are original.

Irritation, which is the effective agent of Mr. Hunter, can only indirectly promote absorption by deranging the enfeebled powers of assimilation, and superadding a morbid to a weakened action; hence the more irritable the ulcer, the more rapidly does it extend. Its character also, whether simple or malignant, and the varieties of each, depend on the nature and degree of the irritation, together with the peculiarity of action it may excite in the exhalents. Opium proves beneficial, especially in simple ulcer, by allaying this morbid irritation; but not by promoting absorption as Darwin was led to infer, in consequence, I presume, of entertaining the very singular opinion, that "no ulcer can heal unless the absorption from it is as great as the deposition in it."—(Zoonom.) Irritability, moreover, could not be conducive to absorption; for it is known that irritation weakens the tone, and injures the healthy functions of an organ. This fact would rather induce us to expect that irritability in the absorbents would prevent the waste of a part, on the same principle that such a state of the blood-vessels increases the evil under which it suffers.

It is admitted by Hunter that absorption requires a passive state of the part: "a condition incompatible with its existence," but the whole tenor of his observations on ulceration, is to prove that the waste chiefly and almost exclusively depends on the accelerated action of the absorbents. In referring results to a "new activity" in these vessels, which are manifestly the consequence of defective nutrition, he was obliged by refined if not abstruse reasoning, to attribute a stimulating quality to such novel and problematical agents as removal, necessity, and death. But this conclusion is not more strange than the extensive and arbitrary application of the term sorbentia by Darwin; who ascribes to such immediate sedatives, or rapidly debilitating narcotics, as opium, digitalis and tobacco, the reverse power of exciting the absorbents.
The doctrines of both, respecting the nature of absorption, imply a more incredible peculiarity in the absorbents, than that of their uniformity:—viz. the disposition of being excited and invigorated in proportion as the power of every other part becomes enfeebled and exhausted. And the fact, that absorption progresses in such conditions of the body, as languor, exhaustion, palsy and death,—and during the operation of medicines producing these conditions of the system, requires, that we either allow those vessels that unnatural susceptibility, or admit the exclusive independence of their powers and uniformity of their action. Those who are inclined to reject the latter as visionary, should reflect before they decide, on the paradoxical and repugnant alternative which they will be compelled to adopt.

*Dropsy* appears to offer serious objections to the Uniform Action of the absorbents. The effusion seems to contradict the opinion that they are not subject to torpor; and it may be thought that the usual method of cure refutes the doctrine that they are incapable of being excited. But an unbiased examination of the pathology and cure of this disease may show, that in this, as in other instances, the fault of the circulation is charged to the absorbents; and that the sensible effect of the action of medicines on other organs, are strangely attributed to changes which they could not produce in the absorbent system, even if its vessels were susceptible of their action. Our remarks will be confined to dropsy, when a disease of the system, and consequent to debility: the same general mode of reasoning will apply to it when partial; and there can be no controversy respecting the vessels concerned, whether it is occasioned by either plethora or obstruction.

The remote debilitating causes of the species of dropsy under consideration, the enfeebled and relaxed state, and, I will venture to add, the peculiar morbid action or dropsical tendency of the blood-vessels, enables us to account for the watery profusion with which the system is inundated, without calling in the really foreign aid of the absorbents. The disappearance of fat, and the progressive emaciation attendant
on this disease, also evince that the lymphatics are neither torpid nor indolent. But the nature of the effusion affords the most convincing and conclusive proof: its quality differs from the ordinary healthy exhalation; hence it must be a *morbid* secretion, and shows that it not only depends on relaxation of the blood-vessels, but also on a disordered condition of their exhalents. If, in connexion with these facts, we reflect, that the extremities of the absorbents, in consequence of being continually immersed in the dropsical fluid, can preserve a constant state of repletion, and convey the full measure of their capacity, it appears probable, that even more than the usual quantity of fluid is imbibed during the dropsical accumulation. The removal of the effusion in the case of protracted death, which has already been quoted from Hunter, proves at least that, instead of any torpor, the action of the absorbents is regularly continued in dropsy.

To promote absorption is one of the chief indications of cure in this complaint. But it is difficult to conceive how the remedies that are generally administered, could have the intended effect, even if the process could be expedited by stimulants. They must either act directly on the absorbents by their presence, or their action must be extended to those vessels through the medium of sympathy. The improbability of either has already been anticipated. The most general and powerful stimulants have not evinced any perceptible effect; and we might, from that consideration alone, infer an equal insensibility to the action of such as are partial in their operation, even if they could arrive at the lymphatics with their composition unchanged. But since they cannot reach those vessels without being subjected to the peculiar secretory action of the exhalents, it is most probable that their qualities must be materially altered in consequence of being assimilated to the product of that action, and moreover subject to all the variety to which a secretion is liable. If they still retain their stimulating power, it must be equally exerted on the exhalents, and thus defeat the object for which they were administered. It is still more improbable that any associated action is extended to the lymphatics: it would
require an extraordinary, and truly mysterious influence of sympathy, to excite a corresponding effort in a part which does not suffer from paralysis, or division of its nerves.

There is no necessity for attributing uncommon powers to the medicines generally administered in this kind of dropsy. If it be only granted, and the concession is certainly consonant with fact, that diuretics, cathartics, &c. act on the same parts, and in the same manner, when given in this disease as when administered in other complaints, we will then not be perplexed with inconsistencies in accounting for their beneficial effect.

The most probable operation of diuretics will illustrate this position. The disease consists in a local determination of a general morbid tendency to inordinate serous effusion or secretion. Diuretics, by stimulating the kidneys, produce a counter local afflux of the fluids to these organs; and as the increase of one secretion diminishes the quantity of others, hence we find a dry, harsh skin, and paucity of urine in dropsy. By exciting the kidneys, the general current is diverted from the cellular interstices and internal cavities, to the urinary organs: the exhalents, being thereby relieved, remain almost inactive; and their cessation allows the uniform lymphatics to diminish the existing effusion with sufficient rapidity to account for the diminution of bulk. It follows, as a general deduction, that the subsidence of the dropsical accumulation is an indirect consequence of increased urinary action.*

The effect of emetics, cathartics, and such medicines as operate on all the emunctories, like mercury, can be satisfactorily explained on the same principles.

The disappearance of large accumulations in a short space

* The diuretic effect of digitalis probably depends on the torpor it produces in the blood-vessels; thus suppressing the action of the exhalents, and arresting the progress of effusion: whilst the continued action of the absorbents accumulates the serous fluid in the blood-vessels, which excites the kidneys in proportion to its quantity. Thus, though the mode of operation is different from that of other diuretics, yet its effects are the same.
of time, will form no objection to the general doctrine. It is a fact, well attested by observation and experiment, that the absorbents are naturally very active. The known velocity of capillary attraction, (should that be the mode by which the fluid is imbibed,) is equal to the effect; and we might with propriety, adduce the rapid absorption of tears as a striking example. But independent of this consideration, the sudden removal of dropsical effusions will not surprise, when it is recollected how speedily large quantities of water are taken up from the stomach; and how expeditiously smaller collections of lymph or pus are removed from circumscribed cavities, and the cellular membrane, when the action of the exhalents is either suppressed or diverted. Hence the benefit of emetics in these and similar cases; for it is more than improbable that tart. antim. excites the absorbent system in particular, whilst it relaxes the body in general. The irritation it produces, causes a general determination of the humours to the stomach, whilst the nausea it creates, occasions a languor and inaction in the exhalents of the secreting surface; consequently, the absorbents continue unopposed in the removal of what is already deposited.

Pressure is supposed to expedite absorption by some directly accelerating effect; and this opinion is rendered plausible by the advantage which is derived in dropsy from bandages and tight lacing. But the real effect of these applications probably consists in restraining effusion, by resisting the distention of the cells, and impeding the action of the exhalents. Pressure may be so firmly applied as to suppress the action of the exhalents almost entirely, and yet leave the absorbents unobstructed and operative: this is exemplified in the rapid ulceration of the prominent parts of those who are long confined to an horizontal position. Again, a certain degree of pressure may, by supporting the debilitated blood-vessels, relieve the morbid action of the exhalents, and induce a more healthy and vigorous tone in those vessels; on this, the benefit of rollers and adhesive straps in ulcers appears to depend.
These opposite effects of pressure justify the conclusion that it operates by modifying the condition, and varying the action of the blood-vessels; and if this be conceded, the Uniform Action of the absorbents, which it necessarily implies, must also be admitted.

Art. VI. Quarterly Report of Diseases treated at the New-York City Dispensary, to the 15th July, 1828. By John J. Graves, M. D.

The past season has been one of an almost constant continuance of rain, but it has not been productive of much acute disease. Nothing indeed of much interest has occurred; the most general complaints being chronic affections of the bronchiae, and rheumatisms of long standing, which were aggravated by the humid state of the atmosphere. Gastric derangement to some extent has in almost all instances accompanied these, and in many cases has given rise to a mild form of ulcerated sore throat. These complaints have been relieved by the free administration of purgatives and emetics, and such other ordinary remedies as seemed particularly to be required.

Ulcerated cornea, ensuing very rapidly upon an acute form of ophthalmia, have been very prevalent. In most instances this result had taken place before the patient applied for relief. No cause can be assigned for the unusual number of cases which has been met with this season, but there appeared in almost every instance of inflammation of the eye, a peculiar liability to take on this painful form of disease. The general febrile excitement, and the disposition there seemed to be in the ulcer to produce a complete disorganization of the eye, required an active treatment, which consisted in general and local bleeding, and calomel purgatives; and as a local application, the nitrate of silver was chiefly depended upon.

Gastrodynia has not unfrequently been met with. Some few of the cases have been of the severest form, and seemed to bid defiance to every variety of treatment. The greatest
relief we think we have found to be from the application of an antimonial plaister over the epigastrium, and such laxatives as kept the bowels in a soluble state. Nothing gives so much relief during the distressingly painful paroxysm, when the stomach feels as if it were being torn from the body, as a prescription which we have been in the habit of using.* But relief for a short time is almost all that can be expected, a radical cure can scarcely be hoped for, especially when the disease has been of long standing.

Numerous cases of Intermittents have been the subject of our care for two or three months past. With but very few exceptions the subjects have been foreigners, who, from labouring on canals in different sections of the country, were afflicted with the same fever during the last autumn. This liability to a return of autumnal agues on the following spring, is a familiar fact, and can only be accounted for by the imperfect cure in the first instance, leaving the system in a state predisposed to give rise to the complaint, when a season shall arrive in which it is common for these organs to suffer from derangement. The early season of the year, characterised as it is by a variable temperature and unsettled state of the weather, is most productive of such derangement, particularly when these viscera have been previously debilitated by disease. From the necessary exposure to cold during the winter, and the consequent contracted state of the capillaries of the surface, a preternatural determination of fluids to the internal organs takes place. This is well known to be the greatest towards those parts which suffer from debility and irritation.

From the comparatively equable state of the surface during this season, the determination to parts is more steadily kept up than it is in the spring, when from the continued atmosperical

* R. Ammonize Carb. 3ij.
Tinct. Cinch. Comp. 3j.
Sacch. Alb. 3ij.
Aq. Menth.
Aq. Purw. aa. 3ij. M.
vicissitudes, constant changes are taking place in the circulation. It would seem that steady determinations to organs, when not carried to too great an extent, are not as prejudicial to a comparatively healthy state of their functions or structure, as frequent changes in the amount and force of the fluids which they contain. At one time, in such cases they are too highly stimulated, when perhaps at another, they become debilitated from the want of a stimulus, that in a healthy state would be thought too great, but which they become more or less accustomed to. By this irregularity of transfer, the organs are kept in a state of irritability, much greater than if the changes of temperature did not take place, as they do not but in a slight degree during the winter. A steady morbid determination too, may be more easily relieved than when it is variable. A pediluvium, and a bowl of warm tea, will thus dispel symptoms at this season, which may require more active treatment in either spring or autumn. Why after a first attack, the predisposition to an intermittent form of disease particularly, should remain dormant in the system for three, four, and six months, and then re-appear in its original character, after all, can no more be accounted for, than why fever should ever assume this character.

In almost all these cases, there were marked symptoms of extreme hepatic derangement, showing itself in a variety of forms, as icterus, ascites, enlarged liver, constipation, and a general debility. The most of these had been cured when first attacked, by quinine and strongly stimulating drinks; these were administered by friends generally, without reference to the paroxysm or state of the system. After evacuating well the first passages, a full dose of Dover’s powder just before the paroxysms, was found sufficient to put a stop to their appearance. A simple infusion of cinchona, gentian, and colombo, was afterwards administered; and for the most part, was found to answer perfectly well in stimulating the impaired secretory functions of the stomach, bowels, &c. to a healthy action, and by that means procuring a healthy digestion, restoring the balance of circulation, and giving strength to the system.
When icterus or ascites were the most prominent disorders, of course some variation in the treatment was required.

Several cases of petechial typhus were met with in the months of April and May. In their character they were the same as were occurring at the same time at the Bellevue establishment. Accompanying the usual symptoms, there was one that we have not seen mentioned by authors; it was an inflamed state of the fauces, which in a few days assumed an oedematous appearance, the root of the tongue at the same time becoming swelled and affected with an intense soreness. Stimulating liniments and yeast gargles gave much relief. Blisters to the epigastrium were sometimes found necessary to relieve a dull, oppressive pain, and tenderness in that region. Large doses of calomel frequently repeated, followed occasionally by castor oil, and mucilaginous drinks, were chiefly relied on until a returning healthy state of the skin, and lessened coating of the tongue began to show an altered state of the disordered digestive secretions, when ammonia in excess in the spirits of mindereri, weak infusions of colombo, seneca, and serpentaria in combination, and an occasional purgative, were all that seemed required for a successful termination of the disease.

In the cases that have been seen this season in different parts of the city, no instances, we believe, have been known that will give support to the doctrine of personal contagion in this fever. It is true that several members of the same families, where they occupied the same building, have been affected, but the causes which produced it in the first instance, were capable of producing it in all the others. In one house occupied by four or five families, two in one of them, and three in another, had the fever, but none of the many persons who visited it, nor any of the inhabitants of the neighbourhood, were affected with this or any disease that could be traced to contagion. Upon examination, no cause whatever could be discovered in or about this house for the appearance of the disease, unless an extensive syphilitic ulcer on the skin of a man who afterwards died in the Fever Hospital at Bellevue, as we understand, of this fever, could be called
such. The house was remarkably clean for one occupied by this class of our population, and far worse and more neglected sloughing ulcerations in more filthy, ill-ventilated, and wretched habitations have been seen, but they never, to our knowledge, so infected the atmosphere with an effluvium, capable, by decomposition, of producing a malignant fever, which by virtue of its peculiar properties, could reproduce its like in any number of cases. The fact that we have mentioned may serve, however, as evidence to confirm the belief of those who are of opinion that decomposed human effluvium is the cause of typhus, and that this when it has once taken place, is capable of giving rise to a miasm completely elaborated, and which, from some peculiar combination of its principles, is personally contagious. If human effluvium be the cause, how does it happen that in situations and seasons unfavourable to any such origin, in families and places, when it is impossible in reason even to entertain for a moment a suspicion of this kind; how does it happen, we say, that under such circumstances, typhus even of a malignant character is not unfrequently met with? As to personal contagion, we are skeptical in any thing that has even the shadow of a leaning to such an opinion, and think the doctrine far more untenable, than that of the generally supposed original cause of this fever. We believe, as we have stated in a former paper, that typhus, the remittent and intermittent, are identical, arising originally from the same cause, but assuming their peculiar types in the first instance, with a liability to run indiscriminately in their progress into each or either of the other forms. Since the date of that report, we have had opportunities of conversing with intelligent physicians from different parts of the state, and from the results of the information obtained from them, have seen no reason to alter the opinion then expressed.

Now it seems to be granted even by those who deny this identity, that it is possible for any of the ordinary causes of fever to give rise to specific typhus, and very frequently indeed, to give a typhoid character to any fever from the first, but that this is dependent upon certain circumstances connected with a depressed state of the nervous system. This
concession or modification, affords an argument that leads us to the reasonable conclusion, that this predisposing state is the peculiar one required to give in every instance that character to fevers, which makes the only difference in the three forms we have mentioned. The second, or pyretic stage of an acute paroxysm of intermittent, at the time could scarcely be distinguished from a remittent or typhus in their essential symptoms. There are indeed slight differences, but these do not afford the necessary symptoms which indicate the prominent seats of disorder. And it is as Clutterbuck remarks, "only by observing the termination and recurrence of the paroxysm that the distinction can be made. An identity of symptoms—as he truly says—therefore shows an identity of disease." Now, no man will for a moment attach a contagious character to a remittent or an intermittent, not even, we believe, if they should assume a typhus complexion; and we are not able to perceive any distinction between a fever, whether it be originally a typhus, or whether it begin in either of the other varieties, and terminate in a well characterised form of that fever. The course of the latter, it is true, is different, but after it puts on a certain form, there is really no distinction. Finally, if typhus is in fact personally contagious, and this contagion arises from infectious secretions from the body, some proof should be adduced, capable at least of demonstrating this peculiar decomposition or elaboration of poisonous effluvium from the system; some evidence so conclusive, that a mind open to conviction could not well resist it. But this is not the case, nor will it be, while the circumstances in favour of contagion itself are so deficient in accurate detail, and so capable of being reasoned away, or at least of leaving strong doubts upon the subject.

There is a fact connected with this fever, which we may just mention here, as it is thought to serve in some degree to show the length of time after the cause first affects the system, before it discovers its effects in the peculiar symptoms of the disease. It would seem from some observations made on the Penitentiary fever that prevailed in that establishment, that this interval is two weeks. In 1825, when this fever was
raging there, the convicts were removed en masse from the prison, and confined in the hospital. This was done as a preventive in the case of those prisoners who still apparently enjoyed good health; but more or less of them continued to fall sick for the length of time we have mentioned, after which not a single case we believe occurred. The subjects of disease, it is well known, although they may be equally exposed to the causes, are not alike susceptible to the reception, or rather to the effect of those causes. The powers of the system of one may throw off the miasmatic virus of the atmosphere for a time, and at length become affected, while another will immediately suffer from its poisonous influence. As no new case occurred after two weeks from the period when the prisoners were removed from the pestilential atmosphere of their cells, and of course, from any possible chance of receiving into the system the noxious miasm to which they were then subjected, it was thought to be a fair presumption, that it required that length of time for the cause to operate upon the system before its effects would be shown.

In concluding this report we may here remark, that from the nature of papers of this kind, we are obliged to speak in general terms; and also, that from the character and habits of the persons who come under our care, the diseases require in most instances, a plan of treatment that may not seem to those who are unacquainted with the circumstance, to be correct practice, or as being applicable to the cases of respectable private patients. The diseases of a large majority of Dispensary patients, are either directly or remotely produced, or in some way affected by the intemperate use of ardent spirits. The influence of such habits, and the consequent misery attendant upon such a course of life, need only to be mentioned, for to most they are well known. But although the plan of treatment may from these circumstances be somewhat peculiar, still the principles of medical practice, if correct, we conceive are always the same; but observation and judgment are necessary to make a right application of them, and so to modify our treatment of diseases, that it may be suited to the cases before us, governed as they may be by
idiosyncrasies, temperaments, habits, and local peculiarities. There is no such thing as invariable rules in practice. How can there be, when no two cases are exactly alike? Many symptoms are as peculiar as the constitutions of men are dissimilar, and even where there appears to be the greatest similarity, there are shades of difference which, as they are by close examination capable of being distinguished, may arise from causes that require a mode of treatment, that at first could not have been anticipated. If then we do not sufficiently particularize, it is because we can here only give sketches of what falls under our notice, leaving the outline to be filled up by the good sense and discrimination of others.

Art. VII. Case of Tetanus successfully treated. By Geo. Reidneaur, M. D. of Lebanon, Penn.

C. K. ætat. 14, a servant of Mr. J. B. residing about two miles from this place, in August last, while overheated, imprudently went into the cellar and remained there several hours, with a view, as she said, of cooling herself.

A few days after she complained of a rigidity of the muscles of the superior and inferior extremities, a sense of uneasiness about the root of the tongue, and a stiffness about the back part of the neck, together with a difficulty of swallowing, and some febrile excitement. In short, every organ of voluntary motion appeared to have suffered more or less, and the muscles of the lower jaw became so rigidly contracted as unequivocally to characterise trismus.

An empiric was now desired to visit her, who pronounced it a very anomalous affection, and prescribed his usual balsamic remedies. He continued to attend her for ten or twelve days, when owing to the interposition of her friends, I was requested to see her. When I first saw her, the rigidity of the muscles of her body was such, that she could not bend herself in any direction, but was perfectly stiff, and her jaws were so firmly locked, that she was then, and had been for nearly a week, unable to take even liquid nourishment.
For several days before I was called, she had been repeatedly seized with convulsions of the opisthotonos kind, which had drawn her body backwards in such a manner that it was supported by the head and heels.

The spasms were unattended with violent pain, and generally continued for several minutes, and returned at intervals of about half an hour, during which her countenance was hideously distorted, her respiration hurried, and her pulse contracted and irregular.

From her emaciation and debility being great, I ordered Madeira wine to be plentifully given her, and prescribed dram doses every two hours of equal parts of tinctura opii and spts. terebinth. Upon my next visit I had the pleasure of finding a considerable abatement in the symptoms. She could open her mouth near half an inch, and complained of no pain, and could take some spoon victuals. She took near two quarts of wine in twenty-four hours, which was conveyed into her stomach through the aperture by the loss of two of her teeth.

By a rigid perseverance of the remedies for better than a month, the spasms entirely left her, and she was gradually restored, by the use of tonics and a nourishing diet, to her wonted health.

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Art. VIII. Cases illustrating the Effects of Ergot in Menorrhagia.
By John B. Mish, M. D. of Lebanon, Penn.

Although great diversity of opinion exists as to the powers of the ergot in parturition—some highly extolling it, others considering it perfectly useless, and there are even some who deprecate its employment, and go so far as to pronounce it the pulvis ad mortem—yet we believe it is now generally conceded, that when timely and judiciously administered, it is one of our most important therapeutical agents, not only in expediting labour, but also in restraining hemorrhagies from the uterus.
Having derived essential benefit from it in menorrhagia, I shall relate the following cases of the many in which I have witnessed it, to fulfil the indication for which it was prescribed.

**Case 1.** — In the month of March 1826, I was desired to visit Mrs. E. C. residing about five miles from this place, who, upon inquiry, I found had been subject to menorrhagia for some time, and that in her present attack a practitioner in her neighbourhood had unavailingly tried the usual remedies, together with the tampon. As the discharge continued to be profuse, and as debility was considerable, I conceived it a favourable case for the trial of the secale cornutum. I accordingly left eight powders, each containing five grains, with directions that one should be given every hour. Upon my next visit I was assured that she had not taken the first powder thirty minutes before the discharge had been partially arrested, and that after using the others it had entirely ceased. She has since had several slight attacks, but invariably found relief by taking grain doses of the secale in the form of pills, three or four in a day. Her health is now perfectly re-established, which had suffered much from menorrhagia for several years.

**Case 2.** — Miss M. L. was, on the 3d day of May last, attacked with menorrhagia, and as the discharge, although profuse, was permitted to be unchecked, owing to the superstitious opinion imbibed by her mother that serious consequences would result if remedies should be resorted to for the purpose of restraining it, until her debility became so alarmingly great that I was requested to visit her. When I saw her, I found her strength greatly prostrated, her respiration difficult, her extremities cold, and her pulse small and very weak. Having taken some powders of ergot with me, I left six of five grains each, which I ordered to be taken every hour. After the third was administered, the discharge was checked; and with a view of preventing a recurrence, I directed the remaining powders to be given that day. Since then she has been regular, both as to time and quantity, in her menstrual periods, and has enjoyed good health.
Beck on the Lunatic Asylums, &c. 251

Art. IX. Supplement to the account of some of the Lunatic Asylums of the United States. By T. Romeyn Beck, M.D.

After the paper on this subject had passed through the press, we received from Dr. Todd, through the kind offices of Dr. Tully, of Albany, the reports (in manuscript) for the second and fourth years of the Connecticut Lunatic Asylum. The following abstract is taken from them, and we have also added such corrections to the statements on pages 195, 196, and 197, as are rendered necessary by the additional returns.

2nd year ending April 1, 1826. 36
4th year ending April 1, 1828. 18 22 40
Total admitted from April 1, 1824, to April 1, 1828. 157

<table>
<thead>
<tr>
<th>Age.</th>
<th>10 to 20</th>
<th>20 to 30</th>
<th>30 to 40</th>
<th>40 to 50</th>
<th>50 to 60</th>
<th>60 to 70</th>
<th>Total.</th>
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<tbody>
<tr>
<td>2nd year not specified 4th year</td>
<td>3</td>
<td>9</td>
<td>16</td>
<td>9</td>
<td>2</td>
<td>1</td>
<td>40</td>
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</tbody>
</table>

Species of Insanity.

2nd year not specified.

4th year.

| Mania exultans, despondens ferox demens imbecilis e potu | 9 7 6 2 5 1 | Melancholia attonita complacens despondens errabunda Idiotism | 3 3 1 1 2 |

40
Causes.

4th year.

Hereditary, - - - - - - 4
Constitutional, - - - - - - 2
Predisposition excited by various causes, - - 4
Congenital, (Idiotism) - - - - - - 1
Bodily disease, - - - - - - 1
Hepatic Disease, - - - - - - 2
Following typhus, - - - - - - 1
Structural disease of the brain, - - - - - - 2
Puerperal, - - - - - - 1
Religious anxiety, or exultation, - - - - - - 4
Excessive mental application, - - - - - - 2
Domestic troubles, - - - - - - 3
Death of friends, - - - - - - 1
Failure in business, - - - - - - 3
Intemperance, - - - - - - 4
Jealousy, - - - - - - 1
Disappointed affection, - - - - - - 1
Excessive excitation on a return from a long voyage, 1
Unknown, - - - - - - 2

40

Results of treatment. For the sake of presenting this clearly, we shall give the returns of each year.

<table>
<thead>
<tr>
<th>Recent Cases</th>
<th>Chronic Cases</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admitted 1st Year,</td>
<td>12</td>
<td>32</td>
</tr>
<tr>
<td>2nd Year,</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>3d Year,</td>
<td>23</td>
<td>14</td>
</tr>
<tr>
<td>4th Year,</td>
<td>26</td>
<td>14</td>
</tr>
<tr>
<td><strong>77</strong></td>
<td><strong>80</strong></td>
<td><strong>157</strong></td>
</tr>
</tbody>
</table>
of the United States.

<table>
<thead>
<tr>
<th>RECENT CASES</th>
<th>CHRONIC CASES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DISCHARGED.</strong></td>
<td><strong>DISCHARGED.</strong></td>
</tr>
<tr>
<td>Recovered.</td>
<td>Recovered.</td>
</tr>
<tr>
<td>Much Improved.</td>
<td>Much Improved.</td>
</tr>
<tr>
<td>Improved.</td>
<td>Improved.</td>
</tr>
<tr>
<td>Unimproved.</td>
<td>Unimproved.</td>
</tr>
<tr>
<td>Died.</td>
<td>Died.</td>
</tr>
<tr>
<td>Total.</td>
<td>Total.</td>
</tr>
<tr>
<td>Remaining.</td>
<td>Remaining.</td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>1st Year</td>
<td>2nd Year</td>
</tr>
<tr>
<td>5</td>
<td>12</td>
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<td>12</td>
<td>20</td>
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<tr>
<td>21</td>
<td>45</td>
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<tr>
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<tr>
<td>1</td>
<td>5</td>
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<td>23</td>
<td>20</td>
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<td>15</td>
<td>16</td>
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<tr>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td>132</td>
<td>157</td>
</tr>
<tr>
<td>157</td>
<td>45.86</td>
</tr>
</tbody>
</table>

Admitted during the four years ending April 1, 1828, 157
Of which,

Recovered 72
Much improved, 23
Improved, 16
Unimproved, 15
Died, 6—132
Remaining April 1, 1828, 25

Whole number admitted, 157 72 45.86
Recent cases, 77 63 81.81
Chronic cases, 80 9 11.25

The comparative success of each year will be seen in its table, and in particular, the great success in recent cases during the third year. It is notwithstanding greater in the fourth, (being as 91 to 91\(\frac{1}{3}\)) from the following circumstance mentioned in the report. "Five of the recent cases have been admitted only within 14 days, and cannot be properly
considered in any estimate of the proportion of recoveries."
This leaves, of those remaining from the third year and ad-
mitted during the fourth 23, of which 21 were cured.

As to the chronic cases, Dr. Todd remarks, "the institution
is thronged with incurable patients, who after all attempts for
their restoration have been baffled, and all hope of recovery
extinguished, are placed there by their friends, solely with a
view to their comfort and safety. This forlorn and irreme-
diable class of patients, has constituted during the past year,
two thirds of the whole number of our chronic cases, leaving
only ten out of thirty cases, which could with any propriety
be ranked among the subjects of curative treatment. Three
out of the ten have recovered, affording a ratio of recovery,
equivalent to thirty per centum." During the third year,
making a similar allowance for incurable patients, the ratio
was twenty-six per centum.

T. R. B.
REVIEW.


The life of Bichat forms a memorable era in the history of medicine. Though not without defects, his works must ever be ranked among the noblest productions of the human mind. As specimens of natural science, his General Anatomy, and Researches on Life and Death, are unquestionably unrivalled in richness of facts, felicity of detail, and originality of generalization. Bichat fortunately lived at a period the most auspicious for the successful exertion of his superior talents. Anatomy, at that time, presented a vast accumulation of materials, roughly cast together, and waiting the hand of a master to mould them into a symmetrical form. The genius of Bichat was happily adapted to this work; and it is due to
his fame to confess, that he more than accomplished it. Indeed, in respect to extent of original and valuable research, how few, very few, have equalled him? Anterior to Harvey, Bonetus, and Sydenham, there is scarcely one whose name is worthy of being mentioned. Of those that flourished in the latter part of the seventeenth and in the course of the eighteenth century, who, but Morgagni, Baglivi, Hoffmann, Hunter, Haller, Bordeu, Pinel, and one or two others, can be said to have materially contributed to establish physiology and pathology upon a solid and enduring basis? Even these, great and invaluable as were their services, were but pioneers in the march of science, preparing the way for him, whose glory it was to illustrate the commencement of the present age, by unfolding, in a manner entirely original, the intimate structure, properties, and functions of the primary tissues of the human body, and classifying them according to their analogies. In thus creating General Anatomy, Bichat gave to medicine a character approaching somewhat to that of an exact science. The influence of his writings is, at present, every where seen; and we do not perhaps deviate from the truth in saying, that the principal improvements made in pathology within the last twenty-five years, have resulted from inquiries pursued according to his method of investigating the phenomena of the body in health and disease.

Although the works of Bichat, published during his life, contain numerous references to the changes produced by disease in the different organs and textures of the body, it is only in the volume before us that we are presented with a connected view of his researches into pathological anatomy. The reader will peruse in this work, to use the language of Boisseau, many ideas which have become a kind of public property, and the originality of which is given to others, not to Bichat.

We are told, in an advertisement, by the Editor, Bailliere, that at the sale of the library of Béclard, he became the possessor of a manuscript written in his own hand, of the last course of Bichat's lectures, and that he consulted with several
enlightened physicians with respect to its publication. They all concurred in the opinion that the smallest part of the doctrines of a man who had rendered such eminent services to science and humanity, should be collected with religious care; that the public would eagerly seek the completion of a course of lectures, during the delivery of which Bichat spent the last hours of his valuable life; and lastly, that it would be a supplement full of interest to all the editions of his writings. These considerations determined Bailliere to present the work to the public, and for which he is entitled to the salutations of the profession.

It is not our intention to enter into a critical examination, or extensive analysis of this interesting volume. In fact, the matter contained in it does not admit of being reduced to an abstract sufficiently brief for publication in this journal. The most we can do is, to present our readers with a general idea of its contents, and to give a few specimens of the manner in which the subjects are treated.

The work opens with a discourse strictly introductory, in which, after stating the objects of medicine, and the mode in which diseases admit of being divided into natural classes, a rapid view is taken of the leading pathological doctrines which have prevailed from Hippocrates to the close of the eighteenth century. The author justly remarks, that we may distinguish two classes of physicians; those who have only observed, and those who to observation have added post mortem examinations. The former are very numerous, the latter are confined to a very small number, and are only to be met with in the last, and we may add, in the present century. The practical bearing of this truth on the interests of humanity, is too obvious to be mentioned. The distinction alluded to, however, will continue so long as the indolence of physicians and the prejudices of the world are opposed to the dissection of the dead. But these obstacles to the advancement of our art it is hoped will one day be for ever removed.

The body of the work is divided into chapters, and these again into articles treating of particular subjects. In the first chapter the author confines himself to some general obser-
vations on autopsic examinations. He especially adverts to the lesions of organs produced by different diseases, and also to the several modes in which life is extinguished.

Among the appearances observed on dissection, he mentions one which is worthy of particular notice. He says, "if a patient dies in a syncope, no traces of blood are to be found in the brain." If such be the fact, and who can doubt it, when coming from such authority, what are we to think of the hypothesis of some physiologists, that the quantity of blood in the brain, in its ordinary state in life and death, is never increased or diminished, but always the same; owing, 1st, to the bony case of the head being unalterable in its dimensions, and 2d, to the incompressibility of the brain and blood? That nature has carefully provided against the occurrence of a vacuum in the cranial cavity, under every circumstance that can possibly happen, no one will question. If the brain always occupy the same space, or, in other words, be absolutely or inappreciably incompressible, as it is said has been proved by experiment, it is obvious that the quantity of blood in the brain can never vary, it must be the same, whether the patient die of syncope or apoplexy. Now the appearance of the brain after death from syncope, as stated by Bichat, is directly the reverse of that which every anatomist has seen after death from apoplexy; and hence it may be asked, how it happens that in the former case, the brain appears exsanguineous, whilst in the latter, to say nothing of the deposits of blood from extravasation, its membranes and substance appear excessively engorged?

The second and third chapters are devoted to the consideration of the order to be followed in pathological anatomy, and to the alterations of the fluids. In treating of the fluids, the author, in order to facilitate his enquiries, divides them into two classes, 1st, those which exist in a normal state, and 2d, those which are found in a pathological state. The fluids which exist in the natural state he divides into three kinds, the circulating, the secreted, and the exhaled. His views of the pathology of the circulating fluids are stated in the following terms:
"Nothing as yet, very general, can be said on the changes of the nature of the blood in diseases; on this subject we are confined to a few facts. All diseases marked by strength, such as inflammation, present in the blood which is drawn during life, a Buffy fibrous coat, called pleuritic. We know that physicians who have admitted the thickening of the blood, have made use of this coat to explain the diverse phenomena; but the part they have caused it to act is entirely illusory. It is only formed when the blood is out of its vessels. However, it seems often that the blood participates in the malady without our knowing precisely its mode of influence. In all protracted diseases, the blood loses, in part, its coagulating property and assumes opposite characters. In putrid fevers does it putrefy in reality? Authors have exaggerated respecting this; but the prostration of strength, the facility with which the cadaver putrefies in these diseases, every thing seems to prove that the putrefying principle has passed even into the blood. It is also evident that in local affections, the humours have a tendency to putrefy before the death of the solids. In the inflammation which terminates in gangrene, ordinarily the fetid smell is exhaled before the solids are in a state of mortification.

"As to the other alterations of the blood, there are many which it would be difficult to classify under any general heads. In jaundice the blood takes on a yellowish colour. In general, in all diseases it is the blood which colours the lips and cheeks, in a peculiar manner for each of them, and which enables us often to recognise them.

"From all this we must conclude that the fluids almost always participate in the diseases of the solids. The general consensus, which seems to be wanting in certain cases, would suffice to make us think so. As to the other circulating fluids, they also most probably are altered, but we know less about them."—pp. 24, 25.

The subject of the fourth chapter is inflammation. Under this head Bichat first adverts to the different organizations of different parts of the body, and afterwards gives a general description of phlogosis, the characters of which he says vary according to two principal circumstances; 1st, according to the diseases with which it is complicated, and 2d, according to the system or tissue in which it is located. Though these circumstances were noticed, in a general way, by Hunter and Pinel, it is chiefly to the researches of Bichat, we are indebted for the facilities which have enabled us to extend and systematise our knowledge of the modifications of inflammations.

The remaining chapters of the work relate to the pa-
thological anatomy of the elementary textures, of which the body is composed. These textures, excepting those which compose the substance of the lungs, are generalized, for the most part, in the same manner as we find them in the author's General Anatomy, being comprised in the following systems, viz. the serous, mucous, cellular, glandular, cutaneous, muscular, arterial, venous, nervous, absorbent, fibrous, synovial, cartilaginous, medullary, osseous, pilous, and epidermoid.

In treating of these systems, the author points out the idiopathic and sympathetic disorders to which they are subject, enumerates the diverse morbid phenomena which occur in different parts of the same system, and exhibits the anatomical changes produced in each by disease.

A few extracts from the body of the work will exemplify the manner in which the several subjects are treated. The author begins with the serous system which, as is well known, is composed of a certain number of membranes that cover the exterior of several organs. Speaking of the inflammation of these membranes, he observes:

"Few systems, if we except the mucous and the cellular, are oftener inflamed than the serous; but all the membranes which compose this system are not equally susceptible of it; the following is their order in this respect: 1st, the pleura, 2d, the peritoneum, 3d, the pericardium, 4th, the tunica vaginalis, and lastly, the least frequent of all, the arachnoid."

"Here, the causes of inflammation are extremely varied: in general, we shall never pay any attention to remote causes; among the proximate ones is particularly the suppression of transpiration; this is especially the case with regard to the pleura and the peritoneum. These causes act, not on the affected membrane, but on the neighbouring organs. When the disease is developed, these are the characters which distinguish it: at first it is accompanied with all the general phenomena; fever, chills, sweating; in general, it is singularly variable. A very sudden attack is manifested by an excessive pain of the part, as we see in pleurisy. In no system is the pain more keen; the stages succeed each other with an astonishing rapidity; in three or four days the disease is determined: moreover, the concomitant fever, which is slight in the affections of other parts, is here very intense, and the danger is always more manifest. This inflammation influences also the condition of the organs which it covers; besides, these symptoms vary singularly."—p. 37.
Bichat thinks it is difficult to determine the condition of the inflamed serous membranes during life. Nevertheless, he says, in the operation of hernia, and in certain experiments on dogs, the peritoneum has been observed in a state of inflammation; it was then extremely red. On the subject of adhesions of the serous surfaces, he makes the following observations.

"Inflammation in this system, as in every other part of the body, goes through the same series of stages, if we except adhesion, which exclusively belongs to it. This phenomena has without doubt its origin in the serous membranes, from the suppression for a considerable time, of the fluid which was exhaled before, caused by the inflammation which permits the two surfaces of the membranes to contract adhesions. This termination accompanies always those by resolution. These adhesions are of two kinds: some have for means of union a species of albuminous matter, in the form of a false membrane; the adhesions, properly so called, are those in which the two membranes seem to blend themselves at their surfaces.

"All serous membranes are not equally susceptible of this adhesion. The pleura presents this phenomena in two thirds of the cadavers examined in the dissecting rooms. Next in order comes the peritoneum, which sometimes adheres to the diaphragm and to the liver, seldom to the intestines; then follows successively the pericardium, the tunica vaginalis, and the arachnoid.

"We see by this gradation, that those which are most susceptible of inflammation present, most commonly, adhesions. These are of four kinds; in the first, the two parts are so very intimately united that we cannot distinguish them. The pericardium having been found in this state, has caused doubts to arise about its existence. In the second species, the membranes are united in a more loose manner; in the third, there are a multitude of small fibrous prolongations, which extend from one surface to the other. In the fourth, there are also bands, but larger, flat, and disposed in such a manner, that one would think them natural. Can we ascertain during life these kinds of adhesions? Writers have described as a sign the constancy of the pain; but this only indicates the remainder of inflammation, which lasts more or less time. Besides, this affection is often-times without danger."—pp. 36.

Among the terminations of acute inflammation of the serous membranes, the author particularly notices chronic inflammation. The relation of this form of disease to dropsies is thus commented upon.

"Moreover, the effects of these slow inflammations in the serous membranes, are, an obscure pain and analogous symptoms which often deceive
us in regard to their true nature, because formerly physicians attended only to the dropsy they produced. There is always more or less derangement in the organs which they cover. A remarkable effect of these inflammations, is a real dropsy augmented by exhalation. When these drop-sies have reached their last period, it is often difficult to perceive whence they proceed, and to decide whether they are produced by the affection of a neighbouring organ, or by that of the membrane itself. We must have recourse to the preceding circumstances; for, symptomatic dropsy begins very differently from the idiopathic. Besides, as we have already observed, almost always in that dropsy which depends on the organs, the cellular tissue is infiltrated, whilst in the other, the serosity is confined to the cavity of the membrane. It is the same thing with respect to the encysted drop-sies."—p. 40.

The pathological anatomy of the mucous system, occupies a considerable part of the present work. This system, extending throughout the hollow organs which have external openings, forms a very important part of the economy, and is exceedingly liable to disease. The affection to which it is most subject is inflammation. On this subject Bichat observes:

"The distinctive characters of the mucous inflammations, first depend on the manner they begin, and their close relation to the different states of the skin. They are almost always produced by sudden changes of the atmosphere; hence, colds or catarrhs, coryzae, &c. This close sympathy is equally evident in other mucous affections. Indeed, we know that a cold application on the temples stops a nasal hemorrhage.

"Another character of the mucous phlegmasie, is their prevailing frequently as epidemic diseases. A multitude of authors have spoken of it. This is particularly the case in dysentery. This character causes these inflammations to differ essentially from the serous phlegmasie, and from those of all the other systems. Indeed no mention has ever been made of epidemic of phlegmon, erysipelas, &c.

"The pain in these inflammations is generally less intense than that in all others. In coryza there is only obstruction. Another character is that they are almost always unaccompanied with that swelling of the neighbouring cellular tissue, which we observe in other phlegmasie. In dysentery the abdomen is never distended as in enteritis. As to redness, it cannot be determined, since, in a normal state, it varies according to the condition in which the mucous membranes are found. However, it seems that this redness is always augmented. One can judge of it by analogy from the inflammations of the mouth. Seldom is there any concomitant
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fear; and, should it exist, it is never very intense. Moreover, mucous phlegmasiae can be complicated with all the maladies of which we have spoken in the articles of complications of the diseases of the serous membranes."—p. 62.

Few subjects have been more happily elucidated by Bichat than hemorrhages. He regards them as generally produced by exhalation.

"All physicians, till now, had considered them in too abstracted a manner, without observing that, what is true with regard to hemorrhage of one part, is not so with respect to that of another. All the ideas of the mechanicians, who have explained hemorrhages by obstruction, have been overturned by Stahl, who has considered matter in a manner too abstracted and metaphysical.

"We shall classify the hemorrhages of the mucous membranes according to the parts in which they occur: however, they are divided into two distinct classes; namely, those from rupture, and those from exhalation.

"Hemorrhages by exhalation may happen wherever exhalants terminate; and indeed they have their seat in mucous surfaces. The nasal passages, bronchiae, stomach, intestines, bladder, &c. may be the seat of them. They sometimes happen also in the serous membranes; for we sometimes find a bloody serosity in the peritoneal cavity in certain cadavers. We meet with them also in the cellular tissue; such are those which produce scurvy spots. Those of the skin are of a rare occurrence, but not without example. Finally, glands have often been observed to exhale blood.

"Hemorrhages by exhalation, in the mucous membranes, as elsewhere, are of two species, passive and active. They are active when they are accompanied with development of the vital forces; thus they have this character in the nasal passages, when we remark a tickling sensation, together with a slight pain and redness. At other times they are utterly passive, as when they are met with at the close of some organic affection characterized by debility.

"As to the state of the parts, after death, in which hemorrhage takes place, it does not differ from the natural condition, as it is seen in the matrix, in females dead soon after menstruation."—64.

The particular affections of the mucous system are treated of under the several heads of aphthae, fungi, diseases of the conjunctiva, pituitary membrane, mucous membrane of the mouth, pharynx, larynx, bronchiae, oesophagus, stomach, intestines, glans penis, urethra, vagina, womb and bladder.
Though more ample details on these subjects may be found in the works of the pathologists of the present day, yet no one can read the volume under review, without perceiving that much of that which is claimed by them as original, was publicly taught by Bichat.

The cellular tissue, which fills up the interstices between the other textures of the body, is considered by the author under the relation of the diseases to which it is subject. He says:

"These diseases may be classified under three heads: some, idiopathic, arise there spontaneously, and run through all their periods, as phlegmon; some others depend only upon the continuity of this tissue with some primitively diseased structure, as cancer; finally others, are purely symptomatic, as leucophlegmasia, which is produced by an organic derangement. This distinction is real, and may be recognised even at the bedside of the patient."—p. 100.

With regard to the adipose deposits in the cellular membrane, the following are the views of the author.

"Fat may be abundant or may be wanting. In the first case, there is an appearance of plumpness. When this embonpoint is not very considerable, far from constituting a disease, it is on the contrary a sign of health. Sometimes the fat accumulates in so great a quantity that, indeed, it produces a true pathological condition; but still there exists this difference between this latter state and anasarca, that excessive fatness does not kill the patient; but denotes only feebleness, little activity when in motion, and sometimes exhaustion, as we observe in eunuchs. This embonpoint is developed when favoured by certain circumstances; it is often observed to occur from the age of forty to fifty, and also, generally in those persons who lead a sedentary life, and who are fond of good living. The abdomen is particularly the seat of this accumulation of fat, which occurs sometimes in its cavity, and sometimes on its parietes. This condition has never been observed to coincide with an organic affection. The other parts of the body, besides the abdomen, may also become loaded with fat, such as the neck, thorax, and extremities.

"Sometimes fat disappears from the economy. A moderate leanness never constitutes a morbid condition. Nevertheless, if it coincide with a state of feebleness, then it is ordinarily the symptom of an organic disorder, especially in the lungs. This leanness may also supervene upon sad passions; but does it then depend on an immediate affection of the cellular tissue? It is more probable that it succeeds some organic alteration.
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Violent exercise, change of air, want of nourishment, are so many causes which produce leanness. Sometimes leucophlegmasia is added to the emaciation."—p. 109.

In the chapter on pulmonary diseases, the author makes the following interesting remarks on asphyxia.

"Asphyxia may be referred to the chapter on the diseases of the lungs. We divide them into two general classes: 1st, those caused by simple deprivation of air which takes place in a vacuum, by strangulation, by submersion, &c. And 2d, those which are produced by deleterious gases, as azote, hydrogen, exhalations from privies, as well the vapour of charcoal.

"Drowning presents the following phenomena: the lungs are more or less gorged with blood; the bronchiae contain ordinarily a little water, we meet at the same time with a great deal of mucus; we also sometimes find foreign bodies, such as gravel. The heart is very much dilated on the right side; the veins are gorged with a quantity of blood, which we find also abundant in the arteries; the heat disappears suddenly, which distinguishes this kind of asphyxia from all others. In general, the difference in the cooling of divers cadavers is always to be ascribed to the kind of death, and consequently we should be on our guard never to decide too hastily on the period at which the patient has expired. As to the state of the capillary system in drowning; on the external surface it is very much loaded with blood, particularly on the superior parts which are quite black, whilst the inferior extremities are very little coloured. This condition, especially of the face, agrees very well with the facility with which these same little vessels retain the red blood whilst alive. The brain presents also vessels very much engorged; as to its substance, it is in its ordinary condition.

"Strangulation presents nearly the same disposition. Nevertheless the lungs are less engorged because the air has been suddenly stopped, but the veins and the arteries are full; there is often erection of the penis, without our knowing why.

"In asphyxia produced by charcoal, the lungs are more or less engorged. If the death has been slow, they are very much so; and if it is sudden, very little. The heart and blood-vessels are very full. At the same time that it is abundant, the blood is always liquid. Heat is preserved for a long time in this kind of asphyxia; but the fluidity of the blood is kept up long after the heat has escaped. The limbs may be bent with the greatest facility, which is not the case with the other kinds of deaths, in which state much strength is required to bend them. The superior parts are somewhat livid; there is a peculiar vivacity of the eyes.

"As to the other kinds of asphyxia produced by deleterious gases, death in them is so sudden, that the lungs are very little engorged with blood: only few autopsic examinations have been as yet made relative to this kind of death."—Bichat, pp. 129, 30.
The work of Martinet, which we have associated with that of Bichat for the purpose of review, is an exceedingly valuable manual of pathology. It is divided into two parts. The first, which is intended by the author as a clinical guide, contains a brief statement of the necessary requisites for the proper conduct of clinical pursuits; and a detailed account of the improvements, which, of late years have been introduced in the methods of investigating the diseases of the three great cavities of the human body. In the second part, care has been taken, says the author, to give in a condensed, yet complete form, every thing that is necessary to enable the observer to distinguish diseases from one another, and if necessary, to draw up with precision the history of them; to this is subjoined an enumeration of the symptoms of the different affections, and the morbid alterations which they induce. The office, which the author has for some years filled at the Hotel Dieu, has, he remarks, afforded him abundant opportunities of verifying, by actual observation, the truth of his statements. The work is, in a word, a systematic complication, made up of the author's own observations and the valuable researches of Laennec, Andral, Lallemand, Serres, Louis, Broussais, Rostan, Bertin, Chomel, Double, Landre-Beauvais, Recamier and others.

Though our limits do not allow us to give a full analysis of this work, we cannot forego the opportunity of transferring to our pages a few paragraphs illustrative of its character and value.

The first part commences with an exposition of the various methods of examination used in medicine. The general method applicable to all diseases is laid down by the author with great precision. He observes:

"It will here be asked, what course should be pursued in the conduct of our researches? Can we adhere to any fixed and uniform plan? Certainly not. For how could the same method of investigation be made to apply to diseases whose seat and nature are totally different? Would it not be absurd, when examining a case of effusion into the brain, to proceed in the same way as if the effusion were seated in the thorax? And what resemblance can there be between the questions addressed to a person with
malignant pustule, and one labouring under scirrhous of the stomach? Surely the means of ascertaining the difference between small-pox and varicella—between hydrophobia and certain nervous affections which stimulate it, must be very different from those adopted, when we want to distinguish mania from arachnitis, inflammation of the stomach from peritonitis, or gout from articular rheumatism. For it would evidently be irrational to pursue the same routine of examination in diseases, so totally different in their seat, nature, and character.

"Our methods of examination then should partake of all that precision which marks the improved pathology of the present day; and though they may not be directed in every case to each viscus and tissue, they should invariably be directed to explore each of the great cavities, where the vicinity of the contained viscera, and their numerous sympathetic relations constitute so many fertile sources of error."—Martinet, p. 16.

The following preparatory examination, which we are told is that usually pursued at the Hotel Dieu, enables the physician to curtail much labour, and so to direct his questions, as to ascertain with precision the seat and nature of the disease under consideration.

"Preparatory Examination.—Whilst examining the general appearance of the patient, and the expression of his countenance, the observer should at the same time ascertain the state of his tongue and pulse, should see the expectoration, if there be any, make him respire, and ask whether he feels pain in any particular part, and if he does, what has been its duration.

"In this way, which is particularly useful in acute cases, a skilful person passes rapidly in review the principal functions of the system, and obtains some idea of the state of the organs contained in the three great cavities, which are generally the seat of all serious diseases. The countenance and general appearance are good indices of the state of the intellectual and muscular systems, the tongue and mouth mark that of the digestive organs, and the pulse indicates either the direct derangement of the organs of circulation, or their connection with the disturbance of others.—The expectoration, respiration, and voice mark the state of the lungs and their appendages, whilst the seat of the pain, of which the patient complains, and the time it has lasted, cast additional light on the information obtained by the previous inquiries.

"The observer is still far from having ascertained the precise character of the lesion he is examining, but by means of the distinguishing signs of the diseases of the principal cavities, he will, in the first place, be able to determine whether the affection be acute or chronic; and in the next, by following the plan of examination we are now about to detail, he will learn
how to give to his questions that degree of precision which is necessary for strict diagnosis and accurate description. By these means may be avoided that oversight so commonly committed in elementary works, namely, of supposing that to be known which is unknown, and of sending the reader to the perusal of a case, of which he as yet knows not even the denomination.

"When commencing to take down a case, first note the name, sex, age, and occupation of the patient; this should be done according to the form above given. In some cases it becomes necessary to state the country or district from which the patient comes, and the diseases which prevail there. For example, many cases of intermittent fevers found in Paris, got the infection elsewhere, which ought to be noted.

"In general, it is advisable to collect the principal facts and circumstances of the case in the presence of those in attendance on the patient; it tends much to inspire confidence. In hospitals, pupils should avoid fatiguing those unhappy persons whom misfortune compels to take shelter in such asylums; and when they are seized by any dangerous disorder, surely their own feelings should teach them, that it is worse than inconsiderate to repeat the same questions many times over, and often without any determinate object.

"The time of making the explanation is not altogether a matter of indifference. When it is intended to put a number of questions, and enter into all the details necessary for a complete narrative, it is advisable to do so during the period of the remission, as then the patient can better bear the fatigue and exertion of conversation. But when on the contrary, we wish to observe the symptoms presented by the disease, and the changes induced in the functions, in a word, the actual state of the patient; then it is better to choose the moment of exacerbation, as all the symptoms are more strongly marked, and their relative importance can be more easily assigned.

"The acute and chronic forms of disease require a plan of examination and narration altogether different. Every thing connected with the previous history should be known, and stated fully in chronic cases; it is the only means of throwing any light on the obscurity which so generally surrounds them. But in acute cases this is far less necessary: it is of very little use, when considering a case of arachnitis, or pericarditis, or when giving its history, to go back to any previous affections of the patient, or inquire what has been his usual manner of living, or what influence any particular agent may have exerted upon him. When the symptoms are urgent, our object is to ascertain speedily the nature and extent of the disease, and meet it by an energetic plan of treatment. Though this principle is true as to the treatment, it is not strictly so with regard to the prognosis, which must be modified by the existence of any particular organic disease, or hereditary predisposition, known to exist in the individual himself, or in his family.

"After having examined the different parts of the body, in order to ascertain its external conformation, and any malformations it may present,
After stating the various inquiries necessary to be made in studying the history of diseases in general, the author enters upon the method of examination applicable to diseases of the head. In treating this subject he considers in detail the state of the intellectual faculties, sensitive system, locomotive system, digestive system, respiratory system, and circulating system.

He next proceeds to the method of examination applicable to diseases of the thorax. Under this head, he says, that after examining the external conformation of the chest, and inquiring whether pain is felt in any particular part, we should investigate the phenomena which result; 1st, from the act of respiration; 2d, those that depend upon the voice; 3d, the product of expectoration; 4th, the symptoms given by percussion; and 5th, those which are referrible to the heart and its connections. Martinet has rendered this part of his work especially interesting, by giving a plain and definite account of auscultation, mediate and immediate. After fully considering the method of studying the diagnosis of thoracic diseases, he thus recapitulates the principal points to which the physician should direct his attention.

"He should begin with examining the expectoration, as being of considerable value in distinguishing diseases of the chest. If limpid and viscid, it indicates acute catarrh; if, after presenting this appearance, it becomes opaque, yellow, greenish or puriform, it marks chronic catarrh; if it adheres firmly to the vessel in which it is received, and is more or less tinged with blood, it announces pneumonia; if round and opaque, masses float in a quantity of frothy fluid; or if they are puriform, and streaked with white lines, and containing small white masses insoluble in water, we conclude that they are produced in a tubercular excavation. If the expectoration is fluid, purulent, and suddenly coughed up in great quantity, it should make us presume, that a fluid contained in the pleura, has made its way through the bronchi, and so is evacuated. When pieces of false membrane are expectorated, they are recognised at once as the product
of croup; and a dark green fluid, exhaling a fetid smell, marks gangrene of the lungs. In hæmoptysis, bright red and frothy blood is expectorated; this should not be confounded with that which occurs in hæmatemesis, or with the bleeding which occasionally comes from the gums or the nares.

"The effects of percussion should next be attended to, as they tend to direct the observer in the examination he is about to make with the assistance of the stethoscope. It should not be forgotten that, even in health, there are some parts of the chest which give a dull sound, as for instance the region of the heart, and the lower part of the right side; there are others in which the sound is heightened, as the lower part of the left side. Percussion indicates the parts in which the sound has become more dull and those in which it is more clear than natural; diminution and absence of the natural sound, characterize pneumonia,—accidental tissues developed in the lung or cavity of the pleura, hypertrophy of the heart, and effusions into the pleura or pericardium; increased loudness of sound occurs in emphysema of the lung, or effusion of gaseous fluids into the pleura; finally, the gurgling and metallic tingling indicate pulmonary excavations, or circumscribed cavities in the pleura, communicating with the bronchi.

"Inquiry should next be directed to ascertain the state of the respiration, (whether it be painful and provokes cough, the character of the cough and also of the voice, which may be hoarse, croupal, &c. after which, by the stethoscope the observer may ascertain the parts of the lungs which are or are not permeable to the air. The "rale crepitan" will indicate to him the first degree of pneumonia, œdema of the lung, and pulmonary apoplexy; acute catarrh will be distinguished by the "rale sonore" or "sibilant,"—chronic catarrh, and the gurgling of softened tubercle by the "rale muqueux," and interlobular emphysema, by the peculiar sound described above, as the murmurs frictionis.

"The phenomena of the voice should be explored in the different parts of the chest. If pectoriloquy is heard under the clavicle, or in the hollow of the axilla, particularly at one side, it indicates phthisis; ægophony is the proper sign of effusion into the cavity of the pleura; finally, the metallic tingling announces a cavity communicating with the bronchi, and the metallic respiration, a simple bronchial fistula.

"When any symptoms of effusion exist, it will be necessary to measure each side of the chest, and try by succession to discover the presence of the fluid supposed to be present.

"When the heart is supposed to be affected, the observer, after having ascertained that there is no unnatural enlargement in the precordial region, and after making percussion, should proceed to examine the pulsations of the organ, between the fifth and seventh ribs, and at the base of the sternum. He should consider these in reference to their extent, impulsion, sound and rythm. If they are feeble, and heard in different parts of the thorax, he may suspect a dilation of the ventricles; if, on the contrary, they are strong and circumscribed, they indicate hypertrophy; if they
emite a clear sound, it is a symptom of thinness of the walls of the heart. The disease is proved to exist at the right or left side of the organ, according as these effects are more audible at the base of the sternum, or between the cartilages of the ribs, and the time at which they are heard marks whether it is the auricles or ventricles that are affected. When the "bruit de rape," or sound like a file, is heard at the left side, and is synchronous with the contraction of the ventricle and the pulse, it indicates a narrowing of the sigmoid-aortic and mitral valves: when, on the contrary, it is synchronous with the contraction of the auricles, the narrowing is at the auriculo-ventricular opening; when it is heard at the base of the sternum, it is a sign of contraction of the tricuspid or sigmoid valves of the pulmonary artery.

"The observer should examine the anterior part of the sternum, to ascertain whether there be an aneurism of the arch of the aorta, and the posterior part of the thorax, to determine that of the descending portion of this vessel. In all these cases, he should attend particularly to the state of the pulse, whether it be frequent, small, irregular, contracted, or developed; lastly, he should conclude this examination by noting the expression of the countenance, the appearance of the body, and the symptoms referrible to affections of other organs."—pp. 66-69.

The exposition of the method of examination applicable to diseases of the abdomen, and also of that applicable to the different tissues, as the cellular, cutaneous, mucous, muscular, fibrous, &c., is exceedingly judicious, and should be diligently read by every student who wishes to apply his pathological knowledge to practice. The author closes the first part of his work with an account of the method of making post mortem examinations, and some general observations on diagnosis.

The second part, as we have before stated, relates exclusively to the pathology and diagnosis of diseases. These are arranged in the following order: Diseases of the brain and its membranes; diseases of the medulla spinalis; diseases of the chest; diseases of the heart and its connections; diseases of the digestive organs; diseases of the urinary organs; diseases of the organs of generation; diseases of the skin; diseases of the cellular tissue; inflammations of the mucous membranes; affections of the muscular, synovial, and fibrous systems; diseases of the vascular system; general diseases; eruptive fevers; fevers; poisons.
In treating of particular maladies, the author displays an intimate acquaintance with symptomatology and pathological anatomy. He says nothing of the therapeutic management of diseases; a circumstance the more to be regretted, as it materially incommodes the young practitioner, who is always desirous to connect the study of the nature and seats of diseases with the indications and means of cure. To the American student, however, the fault alluded to is perhaps of no great consequence; inasmuch as the modes of practice, pursued in the Parisian hospitals, are by no means suited to the cure of the acute diseases of the United States.

There is one character, belonging to the second part of the present Manuel, which greatly increases its value, namely, its exclusive adherence to matters of fact, being no where encumbered with theoretical allusions or speculations. What the doctrinal opinions of the author are, we are left to infer from his statements of the symptoms of diseases and the morbid appearances disclosed by dissection. Judging from these, we should say he is decidedly opposed to the Broussaisian theory of fever. However this may be, we think the facts he records are in no way reconcilable with the dogmas of the Val de Grace professor. The anatomical characters of several forms of fever, so far from showing the proximate cause of the disease to be a gastro-enteritis, go directly to disprove it. Our readers will perceive the correctness of this remark by attending to the account given by the author, of the appearances observed on dissection in the following varieties of fever. "Adynamic fever."—"In the present state of the science we cannot exactly describe the anatomical characters: the bodies run into putrefaction in a very short time; the parenchymatous viscera are found softened: the lungs and the lining mucous membrane of its numerous canals are gorged with a thin, black blood." "Typhus."—"The anatomical characters vary very much; the viscera of the head, thorax or abdomen, sometimes are seen with all the marks of most acute inflammation; in other cases it seems to have been very slight, or no traces of any disorganization may be observed, especially where death has occurred very rapidly:
the bodies generally putrefy quickly.” “Intermittent and remittent fevers.”—“The appearances presented after death are very variable: we know of none which may be called pathognomic of the disease; the spleen is sometimes found increased in size and consistence, particularly when the disease has been of long standing.” “Contagious fevers.”—“The organs to which those symptoms are referrible, which charac-
terized the disease, present various alterations in their ap-
pearance and texture, but in some cases there is no appreci-
ciable alteration, particularly when the patient dies in the early stage of the disease.”

We cannot conclude this article without returning our thanks to Messrs. Togno and Quain—to the former for his excellent translation of Bichat—and to the latter for his version of Martinet. To Mr. Quain is especially due an expres-
sion of indebtedness, for enriching his author’s work with many valuable notes and additions. In no literary labour can the juniors of the profession engage with more benefit to themselves and profit to the public, than in rendering into their own language the medical productions of those who write in other tongues.

Art. II. A Treatise on Retention of Urine, caused by strictures in the Urethra; and of the means by which obstructions of this canal may be effectually removed. By Theodore Ducamp, Doctor of Medicine of Paris, &c. Translated from the French, with Notes and Additions. By William M. Herbert, M. D. New-York. 8vo. p.p. 220. 1827.

We consider judicious monographs, even if they contain nothing that is new, as much more conducive to the advance-
ment of medical science than systems and vade mecums. Of these last, the former necessarily contain a large propor-
tion of error, and the latter are encouragements to idleness.

The work of M. Ducamp, besides posting up in a tolerably satisfactory and candid manner, all that it is necessary to know on the nature and treatment of strictures of the urethra, of-
ers a new and ingenious mode of curing these troublesome
and dangerous maladies. It acquired for its author a very just celebrity in France, which he has not lived to enjoy. His translator, a graduate of the College of Physicians of Surgeons of New-York, at the commencement of the year 1827, by a remarkable coincidence, has also been called away from a community which he might have filled with his fame, and a profession he was fitted to honour.

The work commences with a very good description of the urethra in the male—and an exposition of the cause of strictures, which he attributes to a chronic inflammation and thickening of the urethra and circumjacent parts.

"Strictures may be produced by the induration of the mucous membrane alone; but occasionally the irritation extends to the adjacent cellular tissue and corpus spongiosum: these parts, which are naturally very pliant, lax, and extensible, harden and become dense; the cellules of which they are composed are obliterated, either by the adhesion of their sides, or by the deposition of coagulable matter within them; and the canal undergoes an actual strangulation in the part affected. The passage of the urine is then obstructed in a greater or less degree, both by this coarctation, and the intumescence of the mucous membrane."—p. 3.

We are surprised to find no mention made of the effects of falls upon the perineum, by which the urethra is often lacerated. Some of the worst strictures that are met with, arise from this accident. The early introduction of bougies alone will prevent the cicatrix from narrowing the urethra.

"Whatever may be the seat or nature of the stricture, the symptoms which attend it are nearly the same, or vary only in proportion to the narrowness of the passage that is left for the urine, and the duration of the disease. If the stricture be inconsiderable, the urine flows in a small twisted or bifurcated stream: the patient passes his water slowly, and suffers no other inconvenience than a slight scalding during its evacuation, with a sense of weight at the perineum, and itching along the course of the canal. The stream gradually becomes more slender and weak, the patient takes a longer time to make water, although he passes less at once; he also experiences a greater degree of micturition, so frequent and so urgent as to oblige him to rise several times in the night. The discharge of the urine can now be accomplished only by continued efforts, and is attended with acute pain, and tumefaction of the penis. If, after having
voided as much as he is able, the patient should repeat his efforts, he can yet procure the discharge of a small quantity; an evidence that the bladder has not been entirely emptied. He experiences, particularly after having retained his water some time, a sense of weight in the groins, and pain above the symphysis pubis; if the hand be applied to the latter part, a smooth, hard tumour will be felt, which, upon being pressed, causes exquisite pain, and most commonly excites a degree of micturition. This tumour is formed by the bladder inordinately distended. In this stage of the disease, the slightest fatigue or the least excess may cause an entire obstruction of the passage of the urine, and reduce the patient to a very critical state.

"But the difficulty of making water may arrive at a still greater height. Indeed, we sometimes meet with persons, in whom the stream is so feeble, that instead of being projected to a distance from the penis, it falls vertically between the legs, like the jet of a glass-cutter's wheel.

"The condition of others, again, is yet more deplorable; the urine escaping only drop by drop, and the quantity discharged at a time not amounting to more than four or five teaspoons full, although the patient occupy ten minutes in the attempt. Persons in this state feel a constant inclination to make water; and their existence is passed in miserable perplexity, between the desire and the dread of obeying an urgent impulse. Indeed, nothing can be more painful or exhausting than the urinary evacuation, under such circumstances; so laborious are the efforts of the patient, that his knees tremble, his face becomes flushed, the perspiration bursts from his forehead, and the contents of the rectum accompany those of the bladder, so that the same posture becomes necessary for the latter evacuation that is usually adopted for the former. A merchant, whose case will be hereafter detailed, and who had several strictures in the urethra, being reduced to this state of torture, but, nevertheless, under the necessity of attending to his business, and of passing his water in the street, was in the habit of carrying about him rolls of linen or soft paper, which he would introduce into the anus, and firmly hold there during the evacuation, in order to prevent the expulsion of the fecal matter. The straining necessary in his case to discharge the urine, was such as to cause an enormous inguinal hernia; a disorder, indeed, not uncommon to persons attacked with retention of urine, in whom, also, for the same reason, we often meet with prolapsus ani.

"Incontinence of Urine. When the stricture in the urethra is inconsiderable, it commonly produces, at the same time, both strangury and incontinence of urine. The latter symptom manifests itself in two ways: most generally, a small quantity of urine flows guttamin for a few minutes after the patient has made water. At other times the liquid escapes also in drops, after any very violent exercise. The rationale of the first phenomenon is this: the urine passing with much difficulty through the stricture, its expulsion requires strong contractions of the bladder and abdominal muscles; when these contractions have ceased, that part of the urethra
which is behind the obstruction, contains a certain quantity, which being higher than the opening in the stricture, flows in drops by the mere force of gravity, and falls upon the clothes. If, under such circumstances, the patient neglect to change his linen with suitable frequency, he will be constantly bathed in urine, and diffuse its disagreeable odour wherever he may go.

"The other species of incontinence is produced in a different manner; and occurs only when the expulsion of urine is extremely difficult. In such cases the bladder being almost constantly over-distended. The accumulation of the fluid is no longer limited by the neck of this organ, the sphincter relaxes, the urine dilates that part of the urethra which is behind the obstacle, and it is then the latter and not the neck of the bladder by which it is confined. Whenever, in such a situation, the patient coughs, walks fast, or exercises his body in any manner, the contraction of the abdominal muscles compresses the bladder, and propels some drops of water through the opening in the stricture in such a manner as to wet the linen. Here it is very difficult for the patient to avoid uncleanliness and factor, for the fecal matter is often expressed at the same time with the liquid excretion.

"Complete Retention. Whatever be the degree of strangury—whether the urine flow in an extremely attenuated stream, in an uninterrupted succession of drops, or only drop by drop, there is yet an aggravation of the disorder to be apprehended far more serious in its consequences; namely, the impossibility of passing a single particle of urine—constituting what is called complete retention.

"The least imprudence, the most trifling excess may occasion this terrible consummation. And this we may easily conceive; the strictured portion of the urethra, continually irritated by the pressure of the urine forcibly propelled against it, is rarely free from inflammation, which, if it be but inconsiderably augmented, will cause a greater afflux of humours in the vessels of the part affected; hence a greater or less degree of tumefaction, which may increase the stricture so much as to obstruct the passage of the urine completely."—p. 13-16.

"It is rare to see a man having stricture in the urethra and at the same time enjoying full health. His digestion is more or less depraved, and he often manifests an inordinate irascibility. But the most remarkable consequence experienced by persons in such a condition, is an attack of fever more or less complete, and coming on at indeterminate periods. In some it consists of an intense head-ache, with heat of the skin and acceleration of the pulse; others have a chill which is followed by a slight sweat, but without increase of temperature. In others again,—and these are the most numerous—the paroxysm commences with a violent chill and rigors followed by a hot skin, frequent pulse, and sometimes delirium, terminating in copious perspiration; presenting, indeed, all the characters of a regular fit of intermittent fever."—p. 20.

"Such are the most prominent symptoms of a stricture in the urethra:
their presence constitutes the diagnosis of this disease. To recapitulate
summarily—whenever a person makes water with difficulty, and in a very
small stream—when his attempts are frequent, but productive of a scanty
discharge—when he constantly, or at intervals, feels a sense of weight at
the perineum—itching along the canal—a flow of mucus, and irregular
paroxysms of fever—we are almost positively certain that such a person
has one or more strictures in the urethra.

"We may ascertain the truth by introducing a bougie into the canal:
if the instrument be stopped in its progress, or tightly wedged in a parti-
cular part of the route through which it has to pass, the existence of a
stricture ceases to be doubtful."—p. 21.

The author goes on, page 22, to give the ratio symptomatum—

"The part of the urethra which is behind the stricture, retaining its
natural dimensions, receives from the bladder during the discharge of urine,
more of this fluid than the obstacle will suffer to pass at a time; the latter,
therefore, represents a kind of dyke, which confines a part of the water
that flows against it. In this state of things, the urine continuing to be
impelled with force by the contraction of the bladder and abdominal mus-
cles, presses more and more upon the part of the urethra posterior to the
obstruction, and distends it beyond measure."

This view of the subject is correct, so far as it goes; but
other changes take place. The bladder, like other muscles,
inordinately called into action, acquires great strength and
thickness, and constantly irritated, contracts to a small pouch
incapable of holding more than an ounce of urine. Hence it
happens, that even for some time after the stricture is removed,
the patient is still unable to retain his urine more than a few
hours. It is important to bear this circumstance in mind,
because it will be found that the degree of stricture is pro-
portioned to the frequency of urinating.

After explaining, in a very clear and satisfactory manner,
the mode in which urinary fistulæ are caused by gangrene,
ulceration, or rupture of the perineum, and citing a valu-
able, and the more valuable, because common, case of rupture
of the urethra, by the forcible introduction of a bougie, the
author thus adverts to the formation of abscesses near the
urethra, but not originally communicating with it.
"The inflammation and distention of the urethra behind the stricture, the sources of all the evils we have just described, may also occasion others. It is admitted that inflammation does not always confine itself to the irritated organ, but afterwards extends to the parts in its neighbourhood: it is thus that the inflammation of a tooth is communicated to the investing cellular substance, and causes an abscess in the gum or in the cheek—that an inflammation of the interior of the larynx gives rise to an abscess in the parts surrounding the cartilages of that organ—that chronic irritation of the arms occasions an abscess in the nates;—so the inflammation of the urethra extends, in some cases, to the surrounding cellular tissue, and causes the formation of an abscess.

"The deposition of pus in this place is announced by a sense of unceasing and weight in the perineum; in a short time a small tumour makes its appearance in this part,—increases in size—becomes the seat of pulsating pain—and manifest signs of fluctuation soon appear; the patient at the same time experiences chills and a certain degree of fever. The tumour grows larger, and becomes more soft daily; and if the pus be about to make its way through the skin of the perineum, the integuments in this place become thin and ulcerate, and a certain quantity of a white homogeneous pus, without any proportion of urine, makes its escape. On the other hand, the skin sometimes remains untouched, and the abscess opens into the canal. If the aperture which yields a passage to the purulent matter be behind the obstruction, the urine, being interrupted in its course, enters the cavity of the abscess, and produces all the mischief of a urinary infiltration. If, however, the opening be situated before the stricture, the canal being unobstructed beyond it, the water meets with no impediment in its course, and may pass over the abscess without entering it or producing extravasation."—p. 28, 29.

The bladder in those who have strictures, discharges only so much of its contents, as to preserve it from over-distention. "Why," asks the author, "cannot the bladder discharge above one fourth of its contents, when there exists but an inconsiderable stricture in the urethra?" The cause "cannot be in the canal, for as it allows one fourth, it might in time suffer also the other three to follow.—It is not in the liquid itself; for that which is evacuated presents precisely the same character as that which is retained."—"The cause of the phenomenon lies in the bladder."

The author made the following experiment.

"When strongly urged by a desire to make water, I compressed my penis, near the glands, in such a manner as to allow the urine to pass only
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in a very small stream. I soon experienced great pain in the course of the canal; the desire of evacuating the bladder became more vehement, and the efforts of expulsion more considerable. It was not long before I felt a painful sense of gravitating pain in the region of the bladder and in the groins, and the canal at length gave me such anguish, that I mechanically removed my hand, and restored its natural calibre. I afterwards repeated the experiment with more resolution; the same pain and torture were endured, and became so exquisite, that it appeared as if the urethra would burst, though I had no apprehension of such an accident. At short intervals the pains increased in violence; gradually, however, they diminished, and I ceased to make water, although I had not voided half my usual quantity. The pain still continued very considerable in the urethra. After the lapse of a few minutes, wishing to know whether I had completely emptied my bladder, I attempted to make water, and passed about as much as had flowed during the experiment. This operation I have repeated several times, and always with the same result. Hence I have concluded, that it is the nature of the contraction of the bladder not to be durable, and that after a certain time it ceases, notwithstanding the continued action of the stimulus by which it was first excited; consequently that the ejection of urine is incomplete in cases of stricture, because the time required for its passage far exceeds that for which the bladder may continue its contraction; and which is still more shortened by the patient, as far as lies in his power, on account of the pain which it occasions him. Directing my attention afterwards to the contraction of other muscular parts, I found it durable in none, and that all require intervals of relaxation, though habit may diminish the permanency of the latter."—p. 32, 33.

Treatment.—The author gives the preference, and very justly, we think, except in cases of very narrow strictures, to the wax bougies. In narrow strictures, they have not sufficient firmness, and become too soon soft by the heat of the urethra. Those of gum-elastic are to be preferred.

"When the bougie is introduced, it is to be fastened, that it may not escape from the canal. For this purpose, various methods have been devised. The following is the one most used: two or three needles full of cotton are twisted together, and tied by the middle to the end of the bougie in a double knot; the two ends of the thread are then carried above the gland, where they are united, also by a double knot, and then brought back to the end of the bougie, where they are again secured in the same manner. This kind of bridle has one disadvantage, that of compressing and strangulating the penis, during the frequent erections that take place under the use of these instruments. The same ligature has been fastened under the prepuce; but this has the additional inconvenience of irritating and even ulcerating the gland. Several kinds of elastic rings have been
invented, all of them more or less complicated. I made one of my patients use a very ingenious apparatus. It consisted of a band of caoutchouc united at the extremities so as to form a ring, and of a cundum. After having introduced the bougie, he bent it half an inch from the end, so as to make it at a right angle with the orifice of the urethra. This hook being made, he covered the bougie and penis with the cundum, over which he slipped the gum-elastic ring. This contrivance possesses three advantages. 1st. The ring expands at the time of erection, and does not embarrass the penis: 2d. With the precaution of leaving two or three inches of the bougie beyond the penis, when the erection of the latter takes place, it extends along this portion of the instrument, and does not force out of the stricture that part of it which lies in the opening: 3rd. The matter of the discharge is received on a piece of soft linen, placed within the cundum, so that the patient's clothes are not soiled. I constantly use the ring of caoutchouc. I fasten a thread to the extremity of the bougie, then bringing the ends, right and left to the sides of the penis, over which I slide the ring, they are returned to the end of the instrument, and then made fast by a double knot.

"The bougie being fixed by any of the foregoing methods, the patient wears it a longer or shorter time, according to the degree of pain it occasions. It is advisable not to leave it in the canal longer than half an hour, morning and evening, for the first few days. Afterwards, most practitioners do not withdraw it, except when the inclination to make water is very urgent, and replace it as soon as the patient has satisfied this want. Others do not remove it even at those times, if the patient can void his urine with it in his canal. In this case it is renewed only once a day, or perhaps only once every other day. The size of the bougies is increased gradually as the stricture is dilated, until one can be passed equal in diameter to the natural calibre of the canal."—p. 44-46.

This treatment may be applicable to many cases, especially in hospitals, where our patients may keep in their beds, or at any rate not move about much. But in private, and in general even in hospital practice, the introduction of a bougie every other day and afterwards daily, suffering it to remain in the urethra from five minutes to two or three hours at a time, we have found far preferable, and this is the common practice of the English surgeons.

But what are we to do in those but too frequent cases in which the bougie cannot be passed at all? We do not perceive that the author notices the proposal of Duypetren, which is, to pass a bougie down to the stricture, and to leave it there several hours, and then renew the attempt; a practice
of which we cannot speak from our own experience. But
he advertis, with just censure, to the use of conical steel and
other metallic catheters which are calculated, in our opinion,
to do serious mischief.

The author prefers puncturing the bladder above the pubis,
on account of the greater facility with which it may be per-
formed. We cannot think that even on this account it should
be preferred to puncture through the rectum.

The author next passes in review the treatment of Hunter
by the nitrate of silver, and of Whately by kali purum,
giving, we think, rather an exaggerated account of the disad-
vantages of each, and then sets forth his own peculiar me-

The indication is, "to destroy the morbid disposition of
the parts which form the stricture, and to reduce them to a
level with the rest of the canal.

"Caustic, to be employed as advantageously as possible to a stricture
in the urethra, should come in contact with nothing but the stricture, and
touch it from within outwards throughout its whole extent, affecting no
other part than that which obstructs the passage of the urine. For this
purpose it would be necessary, before attempting the application of the
cautic, to ascertain exactly the situation of the point to be touched.

"It is important to determine with precision at what distance from the
orifice of the glans, the stricture we propose to treat is situated. For this
purpose the canal must be explored with a catheter of middle size, in order
that it may pass readily through the sound parts of the urethra, and be ar-
rested by the first stricture point that it encounters. It is customary to
employ a plaister bougie on which a mark is made with the nail near the
orifice of the glans. I make use of a hollow bougie of gum-elastic, of the
size No. 6, on which are marked the divisions of a foot rule. On intro-
ducing this bougie, I always know the distance to which it has penetrated
the urethra; and when it is stopped by a stricture, I perceive immediately
that such stricture is at the distance of so many inches and lines from the
orifice, which I note down.

"Having ascertained this point, I immediately proceed to the examina-
tion of another, which is the situation of the opening in the stricture. In
order to do this, I take an impression of the stricture in wax, and I obtain
in relief the form of its anterior extremity. For this purpose I make use
of the following instrument, which I call an exploring catheter. I take a
bit of sewing silk, and having tied several knots in it, and dipped them in
melted wax, I round off the wax in the manner represented in fig. 7, pl. I.
By means of a bit of edging I pass the silk into the catheter, entering at the larger opening; when it has reached the other opening, the bulb formed by the knots covered with wax is detained, while the silk passes on and forms at the extremity of the catheter, a pencil of fine downy threads, both soft and strong; or else I pass the bit of flat silk through four little holes situated near the end of the instrument, and uniting them together in a knot, I afterwards spread them out in the form of a pencil. This pencil is soaked in a mixture composed of equal parts of yellow wax, diachylon, shoe-maker's wax, and resin; I take a sufficient quantity of it to enable it when rounded off to equal the bulk of the catheter. I let this moulding wax grow cold, and softening it between my fingers, roll it upon some hard polished surface. I cut this kind of bougie added to the gum-elastic canula, at about two lines from the extremity of the latter, round off the wax like the end of a catheter. By this arrangement, the moulding wax, mingled with the filaments of silk, becomes incorporated with them, and cannot fall off. I introduce one of these catheters into the urethra, and after I have arrived at the stricture, I leave the instrument in its place for a few moments, in order that the wax may have time to grow warm and soften, when the catheter is pushed forward; the wax being thus pressed between the catheter and the stricture, fills all the sinuosities of the latter, enters its opening, and in a word, is moulded according to its figure. The catheter being completely withdrawn, I find at its extremity the form of the stricture."—p. 104, 105, 106.

We must omit some further details, which can only be made intelligible by reference to plates.

The author proceeds:

"Having taken an impression of the stricture, we know whether its opening be in the middle, above, below, or at either side: we want, therefore, an instrument which will enable us to direct at will, the point of the bougie to the middle, upper, lower, or lateral part, in order that it may correspond with the aperture in the obstacle, and enter it.

"To effect this, I make use of an instrument which I call a conductor. It consists of a gum-elastic catheter, of the size No. 8 or 9, eight inches in length, open at both ends, and marked, like all my other instruments, with the divisions of the foot. I close the anterior extremity of this instrument, with a stopper of wax and silk, in order that the fluids in the urethra may not penetrate the interior of the conductor, and I mould this waxen stopper on the end of the catheter, so as to give it an uniformly rounded extremity. The instrument being oiled, is introduced down to the stricture, and the stopper is withdrawn. When the orifice of the stricture is in the centre, the canal forms, at the stricturet part, a section of a cone, having at its apex the aperture through which the bougie is to pass. Now, my conductor also represents a section of a cone, open at its top, and the
Surgery.

consequence is, that when the conductor is applied against the obstacle, its opening corresponds with that of the latter; so that a bougie necessarily enters the orifice of the stricture so soon as it has passed that of the conductor. To this we may add, that the bougie cannot vacillate in the conductor, and you may be certain that the introduction of a bougie by this method, is always very easy, when the opening in the stricture is at the centre.

"When this opening is situated above, below, or at either side, the canal still represents in the strictured part, the section of a cone, but the opening is not at its summit; accordingly the opening of the conductor will not correspond with it, but with some solid part; the conductor, therefore, which I have just described, would not answer in this case. I then employ a conductor which has an eminence of a certain size at one of its sides, near its extremity. By this arrangement the orifice of the conductor is no longer in the middle of the instrument, but on one side. Having ascertained by the form of the impression that the aperture in the stricture is situated at its upper part, I introduce the conductor, and turn downwards the eminence which it has at its extremity; the opening is thus turned upwards, and corresponds exactly with that of the obstacle, so that a bougie passing from the one, necessarily enters the other. If, on the contrary, the opening in the stricture be at the lower part, I direct the eminence in the conductor upwards; I turn it to the right when the aperture is at the left, and to the left when it is at the right; so that I direct at will the point of the bougie into the orifice of the stricture."—p. 109, 110.

We forbear to make further extracts illustrating the subsequent manipulations, which cannot be rendered intelligible without reference to plates.

After opening a passage through the urethra with caustic, the author employs bellied bougies to complete the cure; but upon the whole, seems to prefer distending it with air, introduced through a tube and forced by a syringe into the processus vermiformis cæci, manufactured like gold-beater's skin. These we think are unnecessary refinements. The substantial merits of the author are the discovery of a means of modelling a stricture, and his peculiar method of cauterizing it.

Among other valuable notes by the able translator, we subjoin the following.

"M. Ducamp mentions but two modes of effecting the dilatation of the urethra. There is another, not undeserving of attention, particularly when we reflect that no art requires so great a variety of resource as that of curing diseases. This method consists in the forcible injection of fluids
into the canal. Mr. Soemmering has sometimes adopted this plan in cases where the stricture was so narrow as not to admit the finest bougie. It is

done by injecting olive or poppy oil into the canal, closing the orifice of
the glans, and then by pressure with the fingers, attempting to propel the
liquid through the obstacle. This manipulation is to be repeated until a
bougie can be introduced.

M. Amussal affirms that this process is preferable to the use of bougies,
at the commencement of the dilatation of a stricture; that it is applicable
to cases of complete retention; and that it may also be had recourse to, to
assist the action of flexible catheters; that is to say, when the stricture
has been sufficiently dilated by injections to permit the introduction of a
catheter, it will be advantageous to force the liquid between the instrument
and the parietes of the urethra.” —pp. 218.

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Art. III. On the Atomic Theory of Chemistry. By John Finch,
M. C. S. &c.

2. Electro-Magnetism; being an arrangement of the principal facts hitherto discovered in that science. By Jacob Green, M.D.

The paper of Mr. Finch under the foregoing imposing title, is published in the 29th number of the American Journal of
Science and the Arts. We should not have noticed this pro-
duction, did we not conceive that the author is completely at fault in his notions, and did we not fear, that from the wide
circulation of the journal in question, he might mislead, or
at least confuse some who are commencing chemical studies.

So far as we can understand this paper, the main object of
the author is to point out the advantages which would result
from considering water a compound of one atom of oxygen,
and two atoms of hydrogen, a theory proposed several years
since by Sir H. Davy, but which, with two or three excep-
tions, was not adopted by the best chemists.

The advantages which Mr. Finch promises from the adop-
tion of this theory are,—1st, that the theory of volumes will
then coincide with the theory of atoms; 2ndly, that the num-
bers representing the atoms or volumes of substances, will
approach very near to their specific gravities.

But the author has omitted to mention the inconvenience
attending this supposition, and which, in our judgment, is far
greater than the evil it is intended to remedy. To demonstrate this more clearly, we shall offer the following symbols, representing the composition of the several substances, in volume, according to the most approved chemical authors.

<table>
<thead>
<tr>
<th>Water.</th>
<th>Resulting volume.</th>
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<tbody>
<tr>
<td>Hydrogen</td>
<td>Oxygen</td>
</tr>
<tr>
<td>Muriatic acid.</td>
<td></td>
</tr>
<tr>
<td>Hydrogen</td>
<td>Chlorine</td>
</tr>
<tr>
<td>Hydriodic acid.</td>
<td></td>
</tr>
<tr>
<td>Hydrogen</td>
<td>Iodine</td>
</tr>
<tr>
<td>Phosphuretted hydrogen.</td>
<td></td>
</tr>
<tr>
<td>Hydrogen</td>
<td>Phosphorus</td>
</tr>
<tr>
<td>Sulphuretted hydrogen.</td>
<td></td>
</tr>
<tr>
<td>Hydrogen</td>
<td>Sulphur</td>
</tr>
<tr>
<td>Hydrocyanic acid.</td>
<td></td>
</tr>
<tr>
<td>Hydrogen</td>
<td>Cyanogen</td>
</tr>
</tbody>
</table>
It will be observed, that in each of these compounds the volume of hydrogen is the same; that water consists of one volume of hydrogen, united with half a volume of oxygen; and that all the other compounds consist of one volume of each of the constituents. Now if we adopt Mr. Finch's theory, that water is a compound of one atom of oxygen, and two atoms of hydrogen, muriatic acid should be a compound of one atom of chlorine and two atoms of hydrogen, although formed of one volume of its constituents. Sulphuretted hydrogen should consist of one atom of sulphur, and two atoms of hydrogen, though composed of one volume of each of these elements. The same remark applies to hydriodic acid, hydrocyanic acid, phosphuretted hydrogen, and indeed to most of the compound gases containing hydrogen. How far then this supposition would effect the first object proposed by Mr. Finch, we need not stop to inquire.

This theory found a more able advocate in Dr. Ure, whose remarks at first sight have the appearance of great plausibility. "For aught we know," says he, "water may be a compound of two atoms of hydrogen and one of oxygen; in which case we should have the proportion of the weights of the atoms as given by equal volumes, namely, 1 to 16. There is no good reason for fixing on one compound of hydrogen more than on another, in the determination of the basis of the equivalent scales. If we deliberate on that combination of hydrogen in which its agency is apparently most energetic, namely, that with chlorine, we would surely never think of pitching on two volumes as its unity or least proportion of combination; for it is one volume of hydrogen which unites with one volume of chlorine producing two volumes of muriatic gas. Here, therefore, we see that one volume of hydrogen is quite adequate to effect, in an active gaseous body of equal bulk, and thirty-six times its weight, an entire change of properties. Should we assume in gaseous chemistry, two volumes of hydrogen as the combining unit, or as representing an atom, then it should never unite in three volumes, or an atom and a half with another gas. Ammonia however is a compound of three volumes of hydrogen with one of azote;
and if two volumes of hydrogen to one of oxygen be called an atom to an atom, surely three volumes of hydrogen to one of azote, should be called an atom to half an atom.” Chemical Dictionary, 2d. Ed. 423.

To these suggestions, Dr. Turner in his excellent little treatise upon the laws of chemical combination, offers the following satisfactory reply.

1. Water is composed of one volume of oxygen to two volumes of hydrogen; eachlorine of one volume of oxygen to two volumes of chlorine; and both compounds are supposed to contain an atom of each constituent. An atom of hydrogen is therefore represented by two volumes of hydrogen, and an atom of chlorine by two volumes of chlorine. But muriatic gas is composed of one volume of hydrogen to one volume of chlorine, or, what is the same thing, of two to two: hence it contains an atom of each. We see, therefore, that the same quantity of hydrogen which combines with an atom of chlorine, also combines with an atom of oxygen; and that the example adduced by Dr. Ure, is a most powerful and convincing argument in favour of the very doctrine against which he contends.

2. A similar argument applies to the constitution of ammonia. In fact, nitrous oxide gas is composed of one volume of oxygen and two volumes of nitrogen, but one atom of each element. An atom of nitrogen is therefore represented by two volumes of that gas, precisely as happens with respect to hydrogen and chlorine. But ammonia contains three volumes of hydrogen and one of nitrogen, which is the same ratio as 6 to 2; and hence it is composed of one atom of the one, to three atoms of the other.

Mr. Finch has attempted a table of chemical equivalents upon his plan, which at least deserves the credit of originality. For example, protoxide of chlorine is said to consist of two volumes of oxygen and one volume of chlorine; sulphuretted hydrogen, of two volumes of hydrogen and one of sulphur, &c.!!

In what is said by our author concerning the Daltonian formula, he has been combating a wind-mill of his own construction. Although unmeasured praise is due to Mr. Dalton for his researches, his formula has been greatly modified, and
is not at the present time, rigidly adhered to by a single chemist.

Upon the whole, we regret that Mr. Finch should have ventured upon a subject with which he has evidently so little acquaintance, especially, a subject where novelty can only be excused in the most profound philosophy.

Of the work of Dr. Green we have only a few words to say. It is but a few years since Electro-Magnetism has risen to the rank of a distinct science. The distinguished attention which it has received in various European countries has been followed by discoveries the most novel and interesting; and the facts connected with it have now become so numerous as to require for their due consideration distinct and by no means limited treatises. Several works of this description have been published or are now in the course of publication in England and France; but if we except what is contained in the translation of Biot’s Elementary Treatise, we have had nothing on the subject from the American press.

So far then as it regards the general diffusion of science among our citizens, we are greatly indebted to Dr. Green for the Manual before us, which, as its titlepage informs us, contains the “principal facts” in the science, although we cannot say much in favour of their ‘arrangement.’

Dr. Green, in the composition of this work, has availed himself of the fragments which are scattered through the numerous scientific periodicals of the day. So far as we can judge from an attentive perusal, he is most largely indebted to the Historical Sketch of Electro-Magnetism in the 18th and 19th vols. of the Annals of Philosophy.

It would have been a great convenience to those who wish to pursue the science if Dr. G. had given more frequent references to the original papers from which his extracts are made. For example: “Note C. on electrical quantity and intensity,” is copied without reference from an excellent article on Electro-Magnetism in the 35th volume of the Quarterly Review, a work within the reach of almost every American student.

We also regret that Dr. Green has not indulged his readers
with a little more theory, which, after all the hue and cry against it, now-a-days so fashionable, serves at least the purpose of artificial memory; and in this respect is of great use to the student.

Notwithstanding these regrets, we are highly gratified with the appearance of this volume, and we doubt not that it will be very generally in the hands of chemical students.

QUARTERLY HISTORY
OF
IMPROVEMENTS IN MEDICINE AND SURGERY.

Foreign.

PHYSIOLOGY.

On Cutaneous Absorption. (Arch. Gén. de Médecine. xi. 75, and Bib. Méd. Juillet 1827.)—The subject of cutaneous absorption, and of absorption generally, has been lately investigated by M. Collard de Martigny. He has succeeded in establishing completely the reality of absorption through the skin, and has thrown considerable doubts over the doctrine advanced a few years ago by Magendie and Fodera, and now so generally adopted, that substances are absorbed throughout the animal system by a process of simple mechanical imbibition. As his experiments on these two topics appear to us important and conclusive, we shall give a short account of them. It is well known that Seguin, Magendie and other anterior physiologists have maintained, that the skin, when not deprived of its cuticle, is incapable of absorbing any substances which do not irritate the cuticle, or alter it in one way or another. This, however, does not appear to be the general opinion; yet we are not aware that any very conclusive arguments have hitherto been brought forward to prove the existence of simple absorption through the cuticle. The vagueness of the foundation on which the general opinion rested led M. de Martigny to endeavour to establish it upon more solid facts; and he has made a great variety of experiments, which seem to put its accuracy beyond all question.

He first placed upon the palm of the hand an inverted glass funnel filled with water, and remarked an obvious diminution of the water in the tube
of the funnel after an hour or even less. He then varied his experiment, using precautions to preserve the pressure of the hand on the funnel uniform, as well as to prevent the evaporation of the water, and he still observed a sensible diminution. The following very simple experiment gave equally pointed results. In two small vessels of the same form and size he placed equal quantities of water, one being placed at his side exposed on the surface to the air, while into the other he put his two hands for half an hour. He then removed them and dried them in a handkerchief, the weight of which was taken both before and after this operation. The water of the two vessels was likewise weighed, and the proper correction being made for what was removed by the handkerchief from the hands, he found that 178 grains had been lost by absorption. Similar experiments were made with milk and with beef-tea, and the results were analogous. It appeared to him that the beef-tea was absorbed more rapidly, and milk more slowly than water. On subsequently resuming the investigation, he employed a still simpler method. He placed a few drops merely of the fluid to be examined on the inside of the arm, covering them with a small watch-glass, and allowing the experiment to go on for eight or twelve hours and upwards. In this way he remarked that water and brandy were absorbed altogether, and wine, beef-tea, and milk almost entirely. On next extending his researches to oleaginous substances, he arrived at the singular conclusion, that cutaneous absorption is not exercised upon them at all. Our readers will perhaps remember that Bichat, Magendie, Legallos, and others, have found that oleaginous fluids, directly introduced into the blood, obstruct its passage through the capillaries, and excite inflammation there. They likewise appear to undergo a species of digestion before they enter the lacteals, when they are swallowed as food; and further, when placed in contact with the serous membranes, they are absorbed very slowly, and not till they undergo a species of saponification. In a state of purity, therefore, they cannot enter the blood without causing serious injury. In the alimentary canal this is prevented by their digestion; in the serous cavities by their saponification through means of the serum. On the skin, where there is neither gastric juice nor a serous fluid, it is prevented by their being incapable of passing the cuticle. M. de Martigny found that they did not lose an atom of weight, after being eleven hours in contact with it.

The author concludes this department of his subject by endeavouring to determine the circumstances which regulate absorption through the skin. He has discovered that it is most rapid on those parts of the body where exhalation is greatest. He has further remarked, that while exhalation is going on, there is no absorption; that absorption is diminished during exercise or by an increase of temperature; and that it is increased by a depression of temperature or by the evacuation of blood. In short, cutaneous absorption is influenced by every particular in the inverse ratio of cutaneous exhalation.

The other question which the author has endeavoured to investigate re-
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lates to the mechanism by which absorption is effected. The experimental inquiries of Magendie and Fodera are conceived by many physiologists to be conclusive of the fact, that absorption is carried on by a process of simple imbibition; in other words, that in reaching the absorbent vessels substances percolate the living exactly as they do the dead tissues. It has always appeared to us, however, that the experiments of Magendie were liable to important objections, and that even the more conclusive experiments of Fodera, while they prove that mechanical imbibition or filtration does sometimes occur in the living body as through dead membranes, do by no means also prove that this phenomenon is not materially under the influence of the vital principle. The experimental reasoning of these two physiologists has been very ably criticised by M. de Martigny, and its fallacies exposed. To the experiment of Magendie, which consists in insulating a vein and applying an active poison to its surface, he very properly objects that the poison may have entered the blood not by filtration but through the vasa vasorum. He admits, however, the conclusiveness of the experiment of Fodera, in which he found that substances injected into the peritoneum might be soon afterwards discovered in the chest; but he insists that the existence of such an imbibition is no argument against the existence also of a special action of absorption: and such a special action has, we think, been proved by him to occur in the following phenomena. Into the stomach of animals killed the previous day he injected a weak solution of hydrocyanate of potass, and four minutes afterwards he observed that the outer surface of the stomach became of a uniform blue colour when tested with the sulphate of iron. He then repeated the same experiment on living animals with the following results. Twenty minutes after the injection of the hydrocyanate, when none of it has reached the outer surface of the stomach, he poured several drops of the sulphate of iron over it. It was not till five minutes afterwards that he remarked here and there a faint blue tint not uniformly diffused as in the former instance, but arranged in a fine network; gradually the tint deepened and extended itself, its reticulated structure became less distinct, and at length a uniform blue stain was formed, as in the dead animal. It is not easy to see to what the slow progress of the fluid through the living stomach is to be attributed, unless to the permeability of the tissues being modified by their vitality. He has also endeavoured to establish the doctrine of special absorption by the following experiments, in which an attempt is made to show that absorption is under the influence of the nervous principle. Having divided all the nerves which supply the hind leg of the rabbit, he tightened a ligature round the whole thigh, exclusive of the vein and artery, and introduced a solution of the extract of nux vomica into the lower part of the leg. He then found that the poison operated more slowly than when the nerves were left entire. In conclusion, therefore, from these and other familiar facts, the author argues that the new doctrine of absorption must be modified by a partial return to the old: and he adopts the opinion, that this function is carried on by a special and elective action of the capillaries.—Edinburgh Medical and Surgical Journal.
PATHOLOGY AND PRACTICAL MEDICINE.

A Case of the Foramen Ovale remaining open in the Adult, with a general Narrowing of the Aorta and Arteries, without the Morbus Cyanosus.—It has generally been supposed that the cause of the blue appearance of the skin in the morbus cyanosus was the aperture between the auricles of the heart continuing pervious after birth. M. Miguel has lately met with a case where this communication continued open, and yet there was no blueness of the skin; proving that the generally supposed cause of the discoloration is not correct. The case is in itself interesting.

Jean Antoine Adam, a jeweller, aged thirty-six, came into La Charité, under M. Cayol, August 1825. This man was fair, of small stature, and had never suffered from any severe disease; his complexion was red and white. When young, he was subject to occasional difficulties of breathing, coming on in fits, once terminating in syncope: antispasmodics usually removed them. He was married, and had several children. At the age of thirty, without any apparent cause, the fits of difficulty of breathing became more intense and more frequent. During eight days, he had daily three or four attacks, each appearing likely to terminate his existence. His face suddenly reddened, acute pain in the heart and head, with palpitations, continuing for about a minute; then he grew pale, and fainted. When the attack passed, he felt quite well, till another came on. This state (strange to say!) was looked upon as the indication of some pernicious fever, and large doses of quina were administered to stop its course, but which increased it. After continuing thus during a week between life and death, a change took place; the difficulty of breathing, which had been periodical, became constant, and increased in violence; and the headache became intense. Venesection was prescribed, and the man felt himself resuscitated by the operation, ("Je ressuscitai a mesure que mon sang coulait.")

For some weeks he was relieved, when the symptoms became again aggravated. He was again bled, and with similar success; and to this frequent bleeding, and the application of leeches, he owed the preservation of his life for six years. He says himself that there were more than 6000 leeches applied, and that he was bled seventy-two times during that period.

At the present time he presents the following symptoms: Face pale and emaciated, without the least appearance of the violet or blue colour of the lips, cheeks, ears, or any part of the body; extreme anxiety; respiration short, oppressed, and laborious; orthopnoea; short, teasing cough; the chest resonant on all points, and the respiratory murmur apparent throughout; the whole body is agitated by violent palpitations of the heart; the pulse was small, unequal, intermittent; the limbs oedematous; the abdomen large and tense, and gave an evident fluctuation; the extremities were cold, and the general temperature of the body was under the natural standard; the bowels inclined to constipation.

M. Cayol, in his diagnosis, stated that there was considerable hypertro-
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phy of the left ventricle, with narrowing of the orifice of the aorta by commencing ossification of the sigmoid valves. A diuretic mixture, with half a drachm of acetate of potash, was prescribed, with half a drachm of Aq. Lauri Cerasi.

The patient went on getting worse and worse. The smoking Datura Stramonium was tried, and for a short time gave much relief. The powder of Belladonna was also tried, and it appeared to soothe him a little.

On the 11th of September he died, and the body was opened thirty-six hours after death. On opening the chest, the heart, distending the pericardium, and pressing upon the left lung, appeared twice the natural size. The right ventricle and auricle contained some clots of black blood: their size was larger than natural. The auricles communicated by an opening as large as a two-franc-piece, evidently the foramen ovale, not obliterated. (Revue Med.)

Treatment of Tetanus.—At a meeting of the Westminster Medical Society, held in November last, Dr. Barry (whose name and reputation are familiar to our readers) made the following statement on this subject. "He had been at the head of the Medical department of an Army of 20,000 men, in the Portuguese service and been with it in the campaigns of 1813—4, when injuries of all kinds had been extremely numerous, and he had not seen twelve cases. In those which had come under his notice, he had at first been unsuccessful, he had tried every variety of treatment, and indeed had run through every plan which either experience or imagination could suggest. At length Dr. Fergusson of Windsor, who was his superior officer, came to his quarters; he conversed with him on the subject of tetanus, and had informed him of his great want of success. Dr. Fergusson inquired whether he had tried alternate doses of carbonate of soda and opium; he said not. Dr. Fergusson then informed him, that it had proved very successful in his hands, and recommended him to employ it in the next case which should offer. He had done so, and declared upon his honour, that although he had treated several patients immediately after, he had not lost a single patient. He had given the carbonate of soda to the extent of a drachm in solution at a dose and then followed it by a large dose of laudanum. The manner in which these remedies proved so beneficial, he was induced to think, was owing to the soda dissolving the thick mucous which covered the internal surface of the stomach, and thus allowing the absorption of the opium, and therefore, indeed, it was the opium which produced the cure after all."—Lancet, No. 222.

The above mode of treatment has its origin in some experiments, made a number of years since by Humboldt on Stimulated Nerves. He applied the substances in question, alternately to the nerves of animals, and found that irregular action might be thus allayed.—(Editors N. Y. M. & P. Journal.)
On the Treatment of Intermittent Fever by the application of Sulphate of Kina to the Skin. (Revue Medicale, Septembre 1827.)—Doubts have been justly entertained whether the skin is capable of absorbing substances applied to it, unless the cuticle is previously abraded, or the substance is thrust through the cuticle by friction. It is agreed on all hands, however, that the surface of the true skin, stripped of its protecting cuticle, absorbs with rapidity; and our readers are probably aware that advantage has been lately taken of this physiological fact, in order to introduce into the system medicines which cannot be administered in sufficient quantity internally. M. Lesieur of Paris seems to have been the first who suggested the method now alluded to, and it has been since applied by himself and others to the administration of various active remedies. The paper of which a short analysis follows, is descriptive of the mode of treating intermittent fever by sulphate of kina administered in this way; and certainly the success and advantages held out by the author, M. de Martin, are very flattering. He states, that when the sulphate of kina is applied in a convenient form to a freshly blistered surface, it never, even when used in small quantities, fails to check the disease at once. In a state of purity it is ineligible, as it very soon irritates and inflames the surface of the true skin which is exposed to it, exciting livid redness, causing the formation of a gelatinous pseudo-membrane, and even destroying here and there the vitality of the surface of the skin, so as to produce small superficial sloughs. But when it is mixed in a state of fine powder with cerate, no such effects are produced, and in a short time it all disappears. The advantages of introducing the remedy through this channel are, first, that it can be safely and efficaciously used when owing to irritation or congestion in the alimentary canal, it is either unsafe to administer it internally, or useless, on account of its being rapidly discharged by vomiting or purging;—secondly, that a less dose acts with equal power; thirdly, that it acts more rapidly as the system is sooner brought under its influence;—and lastly, that it can easily be administered to those who are averse to take internal remedies, and more particularly to refractory children.—The circumstances connected with the action of kina through the skin illustrate well its mode of operation. M. de Martin remarks, that it cannot act by effecting a revulsion, or as a counter-irritant, because local irritation is not only not necessary to success, but even also prejudicial; for he has invariably found that the remedy was least certain in its effects, and that the largest doses where required when inflammation was excited. This is easily explained on the principle that it acts through absorption; for the gelatinous effusion which is thrown out in the cases in which inflammation is caused obstructs its access to the absorbing surface. In point of fact, a great part of the powder always disappears when inflammation is not produced. The following cases will serve as examples of the author's plan of treatment. Case VI. A stout man, thirty-five years of age, had been affected for three months with a quartan ague, which had been checked four times by various preparations of cinchona. In the fifth attack, M. de Martin found him at the commence-
ment of the fit with a frequent, strong, hard pulse, intense heat, flushed countenance, frequent strong cough, mucous expectoration, short breathing, pain under the left nipple, and a dry, red tongue. On account of the pulmonic affection, sixteen ounces of blood were taken from the arm. The fit returned again three days afterwards. Next morning, a blister having been applied three days before, and the part continuing to present a fresh surface, six grains of sulphate of kina were mixed with the cerate with which it was dressed, and twenty-four hours afterwards the dressing was changed, and six grains more applied in the same manner. He had not any return of the fit, and from that time improved rapidly in general health. The blistered surface was not in the slightest degree irritated. Case V. A woman, twenty-three years of age, long liable to pulmonary catarrh, and affected for a year previous with wandering pains in the chest, oppression there, and dry cough, was attacked towards the end of November 1836, with quotidian ague, of which she was cured by the internal exhibition of sulphate of kina. Towards the close of December the disease returned, still in the quotidian form. During the fit the heat was intense, the pulse strong and frequent, the general oppression considerable, the breathing difficult, and interrupted by paroxysms of violent cough. She was bled to eight ounces during the second paroxysm. On the morning of the third day, four grains of sulphate of kina, mixed with cerate, were applied to an old blistered surface. The paroxysm never returned. The dressing was renewed every twenty-four hours for four days. The cough and difficulty in breathing continued after the ague had long ceased. The blistered part became somewhat red at first, and a thin pseudo-membrane was formed; but the irritation slight from the beginning, gradually diminished, and at length disappeared before the fourth dressing. Case II. This case exemplifies the kind of local inflammation which is caused by the remedy when not mingled with unctuous substances, as well as the effect of the inflammation in preventing its being absorbed. A soldier had suffered in the course of five months repeated attacks of tertian intermittent, and came under M. de Martin's care after the third paroxysm of a relapse. On the morning of the day on which he expected another, six grains of powdered sulphate of kina were sprinkled on a freshly blistered surface. The paroxysm appeared soon afterwards. Next morning the blistered surface had a deep red colour, was covered with a gelatinous exudation, and likewise showed here and there little yellow spots, which consisted of particles of kina covering little depressions in the cutis vera. Six grains of sulphate of kina were again applied, however. But now the pain became so intense, and the surface so red, that it was necessary to remove the powder, and apply a poultice. On the third morning the blistered part was covered with a thick, livid, moist eschar, having red edges, from which serum was discharged. The paroxysm reappeared this day, and again on the third, fifth, seventh, and ninth days afterwards. During this period the eschar became first black and dry, then round the edges soft and yellowish; and this softening extended inward in the way usual with
A superficial eschar of the skin. After the sixth paroxysm the sulphate of kina was given internally, with the effect of checking the disease at once.—Edin. Med. and Surg. Journ.

On the use of Tannin as a remedy for Menorrhagia. (Annali Universali de Medicina, Aprile 1827.)—This substance has lately been employed, it is said, with very great success, in the treatment of uterine hemorrhage by an Italian physician, Dr. Porta. He has used it for three years, and has never found it fail but twice. The general results he has been led to by his practical experience are, that tannin has a special action on the uterus when the hemorrhage is active, whether it arises from chronic or acute metritis, but that in the latter case the inflammation must be previously combated by repeated copious blood-letting; that it is not of any use in hemorrhage connected with organic disease of the uterus; and that its action is very rapid, while the quantity required to effect a cure is so small as to be easily borne on the stomach. He has published several of the cases which have led him to these conclusions. The following is an abstract of a few of them. Case I. A woman of middle age, and of a bilious irritable temperament, after recovering from a severe attack of miliary fever, was attacked during convalescence with considerable uterine hemorrhage. Conceiving at first that it was nothing more than a premature appearance of the catamenia, she for some time paid little attention to it; but after it had continued several weeks, and had greatly reduced her strength, she became alarmed, and consulted Dr. Porta. He ordered her to take two grains of tannin every two hours, and in two days the hemorrhage ceased altogether. Case II. A woman, thirty-two years of age, of delicate habit, and nursing a child four months old, was seized with uterine hemorrhage, which, like the former patient, she at first imagined to be the catamenial discharge. As it continued, however, much longer than usual, and was rapidly enfeebling her, she had recourse to Dr. Porta, who found that she had been twenty days ill, and that she was affected with lumbar pains, some swelling and tenderness of the hypogastrum and symptomatic fever. He directed her to take a pill containing three grains of tannin every third hour; and she took only eight of them when the hemorrhage entirely ceased. Case III. A woman of irritable sanguine temperament, and thirty-eight years of age, had been affected for three weeks with menorrhagia, when Dr. Porta was called to visit her. He found that pressure on the hypogastrum excited pain there, shooting towards the loins, that the pulse was hurried, and that she was liable to sudden paroxysms of pyrexia. As there was not, however, any notable swelling in the hypogastrum, he ordered the tannin without any preliminary treatment, and the same quantity was given as in the last case. In the course of two days about two scruples were taken, upon which the hemorrhage was permanently checked. Case IV. A young woman of robust habit was attacked with profuse hemorrhage from the uterus, by which in the course
of a few weeks she was reduced to a state of great exhaustion. Notwithstanding her state, and the large quantity of blood she had lost, the pulse was frequent and full, and the hypogastrum was tumid and tender. Dr. Porta immediately ordered her to cease taking wine and tonic drinks, which had been given her up to that time, and directed three grains of annin to be administered every third hour. Towards the close of the fourth day the hemorrhage ceased. The lumbar pains which usually accompany the disease continued a few days longer. Ibid.

Tartar Emetic as used by Laennec in Peripneumony.—"As soon as I recognise the existence of the pneumonia, if the patient is in a state to bear venesection, I direct from eight to sixteen ounces of blood to be taken from the arm. I very rarely repeat the bleeding, except in the case of patients affected with disease of the heart, or threatened with apoplexy, or some other internal congestion. More than once I have even effected very rapid cures of intense peripneumonies without bleeding at all; but, in common, I do not think it right to deprive myself of a means so powerful as venesection, except in cachectic or debilitated subjects. In this respect M. Rasori does the same. I regard blood-letting as a means of allaying for a time the violence of the inflammatory action, and giving time for the emetic tartar to act. Immediately after bleeding I give one grain of the tartar emetic, dissolved in two ounces and a half of cold weak infusion of orange leaf, sweetened with half an ounce of syrup of marsh-mellows or orange flowers: and this I repeat every second hour for six times: after which I leave the patient quiet for seven or eight hours, if the symptoms are not urgent, or if he experiences any inclination to sleep. But if the pneumonia has already made progress, or if the oppression is great, or the head affected, or if both lungs or one whole lung is attacked, I continue the medicine uninterruptedly, in the same dose and after the same intervals, until there is an amendment, not only in the symptoms, but indicated also by the stethoscopic signs. Sometimes even, particularly when most of the above mentioned unfavorable symptoms are combined, I increase the dose of the tartar emetic to a grain and a half, two grains, or even two grains and a half, without increasing the quantity of the vehicle. Many patients bear the medicine without being either vomited or purged. Others, and indeed the greater number, vomit twice or thrice, and have five or six stools the first day; on the following days they have only slight evacuations, and often indeed have none at all. When once tolerance of the medicine (to use the expression of Rasori) is established, it even very frequently happens that the patients are so much constipated as to require clysters to open the body. When the evacuations are continued to the second day, or when there is reason to fear on the first that the medicine will be borne with difficulty, I add to the six doses, to be taken in twenty-four hours, one or two ounces of the syrup of poppies. This combination is in opposition to the theoretical notions of Rasori and Tommasini, but has been proved to me by experience to be very useful. In general the effect of tartar
emet is never more rapid or more efficient than when it gives rise to no evacuation: sometimes, however, its salutary operation is accompanied by a general perspiration. Although copious purging and frequent vomiting are by no means desirable, on account of the debility and the hurtful irritation of the intestinal canal which they may occasion, I have obtained remarkable cures in cases in which such evacuations had been very copious. I have met with very few cases of pneumonia where the patient could not bear the emetic tartar; and the few I have met with occurred in my earliest trials; insomuch that this result now appears to me to be attributable rather to the inexperience and want of confidence of the physician, than to the practice. I now frequently find that a patient who bears only moderately six grains with the syrup of poppies, will bear nine perfectly well on the following day. At the end of twenty-four or forty-eight hours at most, frequently even after two or three hours, we perceive a marked improvement in all the symptoms. And sometimes even we find patients, who seemed doomed to certain death, out of all danger after the lapse of a few hours only, without having ever experienced any crisis, any evacuation, or indeed any other obvious change but the rapid and progressive amelioration of all the symptoms. In such cases the stethoscope at once accounts for the sudden improvement, by exhibiting to us all the signs of the resolution of the inflammation. These striking results may be obtained at any stage of the disease, even after a great portion of the lung has undergone the purulent infiltration. As soon as we have obtained some amelioration, although but slight, we may be assured that the continuation of the remedy will effect complete resolution of the disease, without any fresh relapse; and it is in regard to this point more particularly that the greatest practical difference between the emetic tartar and blood-letting consists. By the latter measure, we almost always obtain a diminution of the fever, of the oppression and the bloody expectoration, so as to leave both the patient and the attendants to believe that recovery is about to take place; after a few hours, however, the unfavorable symptoms return with fresh vigour; and the same scene is renewed, often five or six times, after as many successive venesections. On the other hand, I can state that I have never witnessed these renewed attacks under the use of the tartar emetic. In these cases we observe only, in the progress towards convalescence, occasional stoppages. And this is more particularly the case in respect of the stethoscopic signs: as we find that, between the period when the patient experiences a return of his appetite and strength, and fancies himself quite cured, and the period at which the stethoscope ceases to give any indication of pulmonary engorgement, more time frequently elapses than between the invasion of the disease and the beginning of the convalescence. It is necessary to observe, however, that this remark is still more frequently applicable to the disease when treated by blood-letting; and, moreover, that the patients subjected to the antimonial method never experience the long and excessive debility which too often accompanies the convalescence of those who had been treated by repeated venesections.
"The best way of appreciating any particular mode of treatment is by its results. I am sorry to say that I only began last year to keep an exact account of the results of mine by the tartar emetic; but I can affirm that I have no recollection of death from acute pneumonia in any case where this medicine had been taken long enough for its effects to be experienced. I have only witnessed a few fatal terminations where the case was a slight peripneumony complicated with severe pleurisy. (We shall find, when we come to treat of the latter disease, that, after the first stage, the emetic tartar has little effect in it.) I have also lost some patients who, besides the pneumonia, were affected with cancer, phthisis, disease of the heart, &c.; and these are the cases where I had an opportunity of observing the different degrees of resolution in this disease. Finally, I have lost some who were brought to the hospital moribund, and who sunk before they had taken more than two or three grains of the remedy. In the year 1824, at the clinic of the Faculty of Medicine, I treated by the tartar emetic twenty-eight cases of pneumonia, either simple or complicated with slight pleuritic effusion. Most of these cases were very severe; yet they were all cured, with the single exception of a cachectic old man of seventy, who took but little of the medicine, because he bore it badly. During the present year (1825) I have treated thirty-four cases in the same manner. Of these, five died; but of this number two women, one aged fifty-nine and the other sixty-nine, were brought to the hospital moribund, and sunk before they had taken more than two or three doses of the emetic tartar; a third died of disease of the heart when convalescent from the pneumonia; and a fourth fell a victim to chronic pleurisy, also in the period of resolution of a sub-acute peripneumony. These two last cases will be detailed hereafter; the one at the end of the present chapter, the other in the section on Pleuro-pneumonia. The fifth case was that of a man, seventy-two years of age, who died of cerebral congestion on the tenth day of the disease. Of these five cases, then, the two first cannot be adduced in either way as instances of the effect of this remedy; and the two next are proofs of its efficacy in pneumonia, rather than the contrary. The result, therefore, of the whole is, that of fifty-seven cases of pneumonia treated by the tartar emetic, only two individuals, both upwards of seventy, died of this disease conjoined with cerebral congestion; that is, a little less than one in twenty-eight."—Lon. Med. Phys. Jour.

Sir H. Halford on Tic Douloureux.—May I venture to throw out an opinion, founded on the observations with which my experience has furnished me, that the disease is connected with some preternatural growth of bone, or a deposition of bone in a part of the animal economy where it is not usually found in a sound and healthy condition of it, or with a diseased bone?

The following cases have occurred to me, and seem to give a degree of probability to this surmise; and I throw it out for the consideration of the
profession, in order that a number of facts may be collected, from which a
safe inference at length can be drawn.

A lady, forty years of age, suffered under the violent form of tic doulou-
reux, at Brighton, notwithstanding the careful attention and skill of a very
judicious physician there. On returning to town, it was observed that the
rendering spasms, by which the disease is marked, were frequently preceded
by an uneasiness in one particular tooth, which exhibited, however, no signs
of unsoundness; but the constancy of this symptom was enough to justify the
extraction of the tooth in this instance, (though the failure of this expedient
to afford relief in general does not encourage recourse to the operation,) and,
on its being drawn, a large exostosis was observed at the root of the tooth,
and the lady never suffered more than very slight attacks, and those very
seldom, afterwards.

The D. of G. was attended by Dr. Baillie and myself, for six weeks, under
this disease, in its most marked and painful form, without deriving benefit
from our prescriptions. At length we thought it best to advise him to repair
to the sea-coast, in hopes of renovating the shattered system by taking bark
there. After he had sojourned a month by the sea-side, a portion of bone
exfoliated from the antrum highmorianum, and the D. recovered immediately
and has never suffered the disease since. The bone had been hurt, probably,
by a fall from his horse, which the D. had met with some months before.

The late Earl of C. underwent martyrdom by this disease, and excited the
warmest sympathy of his friends by the agonies he sustained for many years.
He submitted to the operation for the division of several branches of the
fifth pair of nerves repeatedly, by Sir Everard Home, and by Mr. Charles
Bell, without obtaining more than mere temporary relief. At length he was
seized by apoplexy, and lay insensible for some days, and in great peril from
the attack, but finally recovered. After the apoplexy, the paroxysms of the
tic douloureux became less frequent and less severe, and were administered
so satisfactorily by an ingenious physician, who wrote his inaugural exercise
on the disease. For the last year or two of his life, his lordship had ceased to
suffer from the tic, and died at an advanced age, without any marked malady.
His head was not examined after death, and therefore we are left to conjec-
ture only what might have been the immediate cause of his former sufferings.
Whilst I attended him, he underwent repeated exfoliations of the alveolar
processes of the teeth, which I thought occasioned his torment; and, to ac-
count for the cessation of the complaint, I suppose that these efforts to throw
off diseased portions of bone might have ceased, or that the apoplexy had dis-
qualified the nerves for suffering so exquisitely; but there might have been
besides, as some later instances have made probable, disease in the bones
of the head.

The late Dr. P. fell a sacrifice to this dreadful disease, after sustaining its
tortures for some years, with a constancy which attracted all our pity and
esteem, and died at last under apoplexy. No assistance which the expe-
rience of any of us could afford him gave him relief, or controlled the violence
of his attacks. On examining his head after death, there was found an unusual thickness of the os frontis, where it had been sawn through above the frontal sinuses, and at its juncture with the parietal bones. There was discovered also on the falciform process of the dura mater, at a little distance from the crista galli, a small osseous substance about three-eighths of an inch in length, rather less in breadth, and about a line in thickness. The vessels of the pia mater were turgid with blood, and about an ounce of fluid occupied the ventricles. I lamented that the frontal sinuses had not been examined; for I remember he replied to a question which I once put to him, as to his ever having experienced any suppuration within any bony cavity, that he had twice suffered suppuration in the frontal sinuses. Dr. P. had submitted, with great patience, to a division of several branches of the fifth pair of nerves, under the judicious operation of Sir A. Cooper, who, on my mentioning to him the notion I entertained of the cause of tic douloureux, was so obliging as to show me the skull of a person who had died of this disease in the country. The internal surface of the frontal bone is a perfect rock-work.—Medical Gazette.

MEDICAL JURISPRUDENCE.

IMPUTATION OF POISONING.—Detection of a conspiracy, by the inconsistence of the evidence for the prosecution, with the chemical analysis and with the effects of poison on the system.

CASE I.—Samuel Whalley was indicted at the York spring assizes, in 1821, for maliciously administering poison to Martha King, a dress maker, with whom he cohabited, and who was pregnant by him. The indictment contained three charges:—a charge of administering poison for the purpose of killing the woman; another of administering it for the purpose of destroying the living child in her womb; and a third of administering it for the purpose of procuring abortion, the child not being quick.

The moral evidence against the prisoner was derived almost entirely from the testimony of the prosecutrix King, and that of another woman Merryweather, who lodged in the same house with her. Its purport was, that the prisoner had under promise of marriage, cohabited with King, who became with child in consequence; that the marriage was put off, after proclamation of banns, on the ground of its being inconvenient at the time to the prisoner;—that, on two occasions after this, and recently before she was poisoned, he tried to prevail on her to take drugs for the purpose of destroying the child, and maltreated her because she refused;—that she had a dream about purchasing poisoned tarts, and that a fortnight afterwards the prisoner brought her several tarts, which while he declined partaking of them himself, he urged her to eat, "because he should like young Samuel (the foetus in utero,) to have one;"—that she did not take any that day, but ate some the following afternoon;—that after she had eaten them, and was taken ill, the prisoner paid her a visit, and in quitting
her made a remark which implied he thought her dying, and knew she had taken something deleterious.

The prisoner on the other hand, while he admitted the cohabiting, the promise of marriage, and even that a day had been fixed for it, stated that it was broken off in consequence of his having caught her in a suspicious situation with another man;—that she frequently threatened his life on account of his refusing to make good his promise to marry her;—that he carried the tarts to her, because she asked for them on account of a curious dream she had about tarts;—and he proved, by two witnesses, that she had arsenic in her possession, although in her evidence she denied she ever had any, or knew what it was. The defence was therefore grounded on a charge of conspiracy on the part of King and Merryweather.

The medical evidence was to the following effect:

According to the deposition of King, corroborated in many points by that of Merryweather, she felt an "unpleasant coppery taste" while eating the first tart, and this was so much increased while she was eating a second, that she did not take the whole of it. Half an hour afterwards she became sick, felt a burning heat and pain in the stomach, was seized with trembling and feebleness of the limbs, and subsequently had some vomiting. Her fears being in consequence excited, she sent for Mrs. Merryweather, and along with her examined two tarts which remained, and they found a white powder hidden under the preserves. They both became alarmed, and Merryweather immediately set off in quest of a medical man. But it appeared that, notwithstanding her state of alarm, the messenger went to a gentleman who lived a mile off, who had never attended King before, and to whose house she did not know the way. Mr. Thackrah, surgeon at Leeds, who was the gentleman called, arrived at Mrs. King's house about six in the evening, two hours nearly after she had taken the tarts. He found her agitated, and complaining of the symptoms mentioned above; but "the pulse was not much accelerated, the tongue exhibited nothing particular; she did not complain of urgent thirst, or sense of heat in the mouth or throat; nor did she seem to have acute pain." As she told him she had not vomited, he immediately administered an emetic, and soon afterwards another, as the first did not operate. She then vomited. The matter discharged was preserved in a wash-hand basin, and taken home that evening by one of his pupils who had accompanied him; but Mr. Thackrah admitted that the prosecutrix might have introduced a small quantity of poison into the basin before she vomited.

He left her about seven, and sent his assistant to see her at ten. Meanwhile she had according to her own account, another attack of vomiting, the matter of which she preserved, and showed to Mr. Thackrah at his visit the next day; but she did not speak of it that evening to the assistant. This stuff was not taken away for some days, as Mr. Thackrah did not happen to have any convenient vessel with him at his second visit. On this occasion he found her complaining of headache and pain in the bowels, and the tongue was furred; but she had no particular illness that was
apparent, nor was there subsequently any of those effects which are usually caused by small doses of arsenic. After a few days' attendance, deeming her well, he discontinued his visits. She, as well as Merryweather, however, stated at the trial that she had been obliged to keep her bed several days, and that she had never been well afterwards.

The chemical analysis of the various suspected articles was conducted partly by Mr. Thackrah, partly by Mr. Walker, a chemist of Leeds.

In the two tarts, which were delivered to Mr. Thackrah, at his request, on his first visit, they found under the preserves a white powder, which proved to be arsenic. Mr. Thackrah remarked that, when a portion of the powder, with a little of preserve adhering to it, was dissolved in distilled water, and alkalised with subcarbonate of potass, the sulphate of copper caused a green, and the nitrate of silver a yellow, precipitate; and Mr. Walker determined the quantity in each tart to be between four and five grains.

Mr. Walker likewise examined the matters of vomiting, and detected arsenic by the same test in both. The quantity in the first was exceedingly minute,—not above one grain dissolved in at least three pints of fluid. The second matters of vomiting contained a much larger quantity,—namely, between twelve and fifteen grains; and, from the observations Mr. Walker made, "he doubted very much whether the arsenic of this analysis had ever been in a human stomach."*

Such were the facts of this important case. The following are the conclusions which may be drawn from the medical evidence:

In the first instance, Mr. Thackrah deposed on the trial that, although the illness of the prosecutrix was undoubtedly caused by something which had disordered her stomach, he did not think her situation corresponded with that of a person who had taken so much arsenic as was to be inferred from what was contained in the tarts analysed;—and that, if he had heard nothing about poison, he would not have supposed she had taken any. He admitted at the same time that he could not affirm positively, from the symptoms, that she had not taken a minute quantity of arsenic, as the symptoms of arsenical poisoning are subject to great variety.

In the second place, Mr. Walker deposed, in regard to the coppery taste said to have been felt by the prosecutrix while eating the tarts, that arsenic could not cause such a taste, because its taste "is sweet, not like copper; if mixed with sweet tart, it could not be perceived at all."

* Mr. Walker having died since the trial, I have not been able to procure all the particulars of his experiments. The fact that arsenic has not been in the stomach may be ascertained by finding that the precipitates procured from the alleged matters of vomiting by the liquid tests, and more particularly by sulphuretted hydrogen, do not yield empyreuma, or exhale the odour of burning animal matter in the course of reduction.
Thirdly, according to the analysis of the powder in the tarts which were not eaten, the prosecutrix could not have taken above ten grains of arsenic in what she did eat. Now, even after repeated attacks of vomiting, the last matters discharged containing at least twelve grains; which clearly showed that arsenic had been mixed with the stuff after it was vomited,—if, indeed, there was vomiting at all. The same inference is deductible with still greater certainty from the comparison of the quantity contained in the last matters of vomiting with that contained in what was discharged a short time before when vomiting was encouraged by emetics and the free use of diluents; the latter quantity not being above one grain. The prosecutrix indeed stated that the matter from which the larger quantity was procured, had been discharged into the same basin as that from which the former matters of vomiting had been taken, and that a considerable white sediment had been left in the basin when Mr. Thackrah transferred the contents into another vessel. But Mr. Thackrah was sure that no perceptible sediment was left.

Fourthly, Mr. Thackrah deposed, that if so great a quantity had been taken as to render it possible for twelve or fifteen grains to be vomited two or three hours afterwards, it would have occasioned the most violent symptoms, and probably death.

It is impossible to conceive more pointed evidence. The medical investigations were alone amply sufficient to decide the nature of the case.

The prisoner, as will be readily anticipated, was found not guilty. It may be satisfactory to add, that the prosecutrix King and the witness Merryweather were immediately committed on a charge of conspiracy. But the judge, considering the unfortunate state into which one of them had been brought by Whalley’s means, and that they had signed a paper to the effect that all the charges made against him were false, and the result of a conspiracy against him, acceded to Whalley’s request to allow them to be discharged.—*London Med. and Phys. Journ.*

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**Period of Parturition in Women.**—Dr. Samuel Merriman has laid before the Medico-Chirurgical Society of London, the result of some observations made by him on this subject. They are founded on the following data. "When I have been requested to calculate the time at which the accession of labour might be expected, I have been very exact in ascertaining the last day on which any appearance of the catamenia was distinguishable, and have reckoned forty weeks from this day, assuming that the two hundred and eightieth was to be considered as the legitimate day of parturition. The subjoined table shows how often this day was deviated from in the cases of 114 mature children."

<table>
<thead>
<tr>
<th>Week</th>
<th>Days Respectively</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>37th</td>
<td>(255, 256, 259)</td>
<td>5</td>
</tr>
<tr>
<td>38th</td>
<td>(262 to 266)</td>
<td>13</td>
</tr>
<tr>
<td>39th</td>
<td>(267 to 273)</td>
<td>14</td>
</tr>
</tbody>
</table>
These are all calculated from, but do not include, the day on which the catamenia were last distinguishable. Dr. Merriman deems it safe to infer, from this table, that conception is effected soon after the catamenial period has intermittently more commonly than immediately before the recurrence of that discharge. He adds some cases in which pregnancy was apparently protracted beyond the longest of the above periods.

_Medico-Chirurg. Transactions._

**TOXICOLOGY.**

_Case of Death caused by the external application of Opium._ (Journal de Chimie Medicale, Avril 1827.)—The application of opium in considerable quantity to the skin when deprived of its cuticle, is a practice by no means free from danger; and when it is resorted to for allaying irritation, it is necessary to watch the patient carefully. We are acquainted with an instance in which deep coma was induced by the application of an opium poultice to the scrotum previously deprived of the cuticle by a blister, and which would in all likelihood have proved fatal, had not one of the patient's friends called accidentally to see him and discovered the cause of his state of sopor. The following is an example of death originating in the same source, although the skin was not deprived of its cuticle. A soldier, thirty-two years of age, was attacked with phlegmonous erysipelas of the fore and outer part of the right leg, on account of which a linseed poultice, moistened with fifteen drops of laudanum, was ordered to be applied to the limb. Next morning he was found in a state of deep sopor, with the face pale, the eyelids tremulous and half open, the pupils contracted, the lips distorted, the muscles of the face affected with spasm, and those of the limbs with convulsions. The surgeon having remarked a strong odour of opium, as well as a yellow coloration of the bandage which enveloped the limb, he had it removed, and found not only the bandage but all the compresses soaked with laudanum, which was flowing copiously from the poultice. The attendant whose duty it was to make up the poultice, had left it in charge to an hospital servant, without telling him what quantity of laudanum was to be used; and the latter had ignorantly used towards an ounce. Antispasmodics, emetics, and sinapisms, were resorted to, but in vain. The convulsions increased, the pulse became more and more feeble, and the patient died. On inspection some red points were seen on the arachnoid, a strong opiate odour was exhaled from all parts, and the heart, stomach,
and brain were in their healthy state. In the blood-vessels no trace could be found of the poison which had been absorbed.—Edin. Med. Surg. Journ.

Cases of Poisoning with Belladonna. (Journal de Chimie Medicale, Decembre 1827.)—Two children ate a considerable quantity of the berries of the Atropa Belladonna. The elder of the two on going to school immediately afterwards, burst out into immoderate and uncontrollable fits of laughter, and constantly caught at objects which he conceived were before him. Subsequently was added to these symptoms an incessant, incoherent babble, with continual agitation of the body, fixed eyes, dilated and insensible pupils. This was above three hours after the berries had been taken. The physician who then saw him for the first time administered an emetic, which brought away a large quantity of reddish matter containing fragments of the berries. After this tartar emetic was given, though not without great difficulty, as the lower jaw was spasmodically contracted. Notwithstanding repeated vomiting, the symptoms went on increasing, the limbs were in constant agitation, the breathing high and croupy, the face red, and the incoherence constant. Purgatives were then administered, and afterwards vinegar. Four hours after the poison was swallowed the breathing had become stertorous, the skin cold, the face bloated, the pulse imperceptible. The child was then immersed in the warm bath and bled from the jugular vein to the extent of six ounces, with marked advantage. The muscular agitation was now broken by intermissions of profound sleep, in which, however, the patient was not permitted to indulge for twelve hours more. Next morning (nineteen hours) calomel was administered and caused several evacuations. In the afternoon the pulse again became almost imperceptible, the skin cold and pallid; and the warm-bath was therefore repeated and followed up by sinapisms and asafoetida injections, in consequence of which the pulse and temperature were restored. Four hours afterwards these symptoms recurred and were again successfully combated by the same means. An hour and a half after that, or 29½ hours after the berries were eat, the whole symptoms were much abated, and the child was sensible. From this time the amendment was rapid. But it was not till the third day that he could distinguish objects. Till then he was entirely deprived of sight: even a lighted candle held close to the eyes, did not seem to make the slightest impression on the retina. For some time afterwards he was in indifferent health, and had occasional fits of slight convulsions; but he ultimately got quite well.—The circumstances of the other case were precisely the same in every respect.—Ib.

CHEMISTRY.

Solanic acid.—Some time since M. Desfosses announced the discovery of a distinct alkaline principle in the berries of the Solanum nigrum, L.
which he gave the name of Solanine. It appears that M. Peschier has as
serted that this principle is combined with a peculiar acid, which he has
denominated Solanic acid. If this should be confirmed by other chemists,
it is to be hoped that some other name may be adopted either for the acid
or alkali.—(Edit. N. Y. M. & P. J.)

According to M. Peschier this acid may be separated by means of Am
monia, which precipitates the vegeto-alkali. It has a crystalline form, is
soluble in water, and produces crystallizable combinations with potash and
soda; the first in acicular crystals, the second in quadrilateral prisms, with
a sweet taste.—Solanic acid is without action upon the salts of lime, baryta,
magnesia, iron, zinc, and copper; and only a feeble action upon those of
lead, silver and mercury. This acid has been found also in other plants
of the same genus, and may, therefore, be regarded as peculiar to the
family.—Bull. Univ. e. xii. p. 287.

Purification of alcohol.—A prize was offered by the Royal Academy of
Brussels to the person who should prove upon what the differences between
alcohol, extracted from various substances, as fruits, grain, roots, sugar,
&c. depended. This was obtained by Mr. Hensmans, who was led, by nu-
merous experiments, to conclude that the alcohol was always identical, but
that the difficulty, more or less great, always found in rectifying it, as well
also as the difference in taste, depended upon the presence of a fatty mat-
ter, and a little acetic ether. The fatty matter, when alone, may be sepa-
rated by several distillations, but the acetic ether is not removed in this
way. It is better, in every case, for the removal of both, to add a little
caucastic potash, or soda to the alcohol, to be rectified. Carbonated alkali
does not act with sufficient energy.—Bull. Univ. E. 8. 289.

On the caseous oxide and caseic acid of Proust.—The results obtained by
Proust, relative to the substances produced by the fermentation of cheese,
have been examined and described by M. Henri Bracannot. The substance
which Proust distinguished as caseous oxide, he shows to have no claim to
such a title, and proposes to call it Aposepedine, as being produced by pu-
trefaction. It also appears to be produced in certain morbid diseases.

The properties which Proust has assigned to caseic acid, belong, according
to M. Bracannot, to various contaminating substances, none of which have
any title to be considered as a particular acid. The substances present are
free acetic acid, aposepedine, animal matter soluble in water and insoluble
in alcohol (ozmazome) fluid oil; a brown resin, acetate and muriate of pot-
asb, and traces of acetate of ammonia.

On examining the fatty matter of cheese, Bracannot found it to consist
of margarate of lime with margaric and oleic acids; the butter having
undergone the same kind of change during the fermentation of the cheese,
as that produced when it is saponified by the action of alkalis or other
bodies.—Annales de Chimie, 86, 159.
On testing the presence of Ammonia in a substance.—Having occasion to ascertain whether the action of a salifiable base upon a body containing azote, was simply that of evolving ammonia, previously existing, or that of forming ammonia by the combination, M. Plessin was induced to search for a base which would effect the former object, but not the latter. Potash, lime, magnesia, and many other bodies do both, but the hydrated oxide of lead answered the purpose very well. It gives no indication of ammonia when put into contact with azotated substances not containing that alkali; even urea is not affected by it; but being put in contact with an ammoniacal salt, ammonia was instantly evolved, and rendered evident by the visible fumes which arose upon the approximation of a little acetic acid.—Annales de Chimie, 36, 177.

OBSTETRICS.

Extra-uterine pregnancy, terminating in the discharge of the foetus piece- 
meal by the anus.—(Journal des Progès de Sciences T. premier, 1827.)—
A middle-aged woman, of a strong constitution, and well constructed pelvis, and who had previously had three children without any particular acci-
dent occurring, became pregnant for the fourth time towards the close of October 1825. Nothing unusual occurred till the thirty-third week, when she began to complain of violent pains in the lower belly, confined chiefly to the left and anterior part of the pelvis near the groin, and quite different from the pains she had experienced in her former pregnancies. As these pains went on increasing, an accoucheur was consulted, who found the neck of the uterus situated high up, hard, and half an inch in length. About a fortnight afterwards she was persuaded to consult a sorceress, who lived three leagues and a half off, and who gave her a vio-
lent cathartic. Its operation was so violent that she was for some time in a dangerous state; but she recovered, and then it appeared that the pains had ceased, as well as the movement of the foetus, and that the milk, which had begun to flow a short time before she took the cathartic, had receded. She became eventually so well as to be able to work; but she continued to purge frequently, and the discharges were foetid and bloody. About three weeks and a half after she took the cathartic, she discharged a mass of flesh in a state of putrefaction and adhering to the bones of the leg of a foetus; and its escape was followed by a copious putrid evacuation. For fifteen days after she discharged successively portions of bones, along with fluid foetid evacuations; and in the course of that time was reduced to a very low state by hectic fever. At last there appeared in the left side of the abdomen a tumour, which soon suppurated, and bursting, discharged a large quantity of foetid pus. The stools then became less frequent and she gradually recovered, so that in September 1826, she was in excellent health, though feeble. The neck of the uterus was in its usual condition, and the abdomen flaccid and not tender to the touch.—Edin. Med. and Surg. Jour.
Case of Double Uterus, with Double Impregnation. (Rust's Magazine, Vol. 20, 569.)—An extraordinary case of this description has been related by Dr. Geiss, a physician of Traffurth near Erfurt. The woman had been in labour for two days, when he was requested to attend her. He found her a stout, healthy female, of middle stature. The labour-pains were confined to the right side. On the right side, the womb reached as high as the thorax; on the left it did not extend above the navel, and inclined forwards and laterally. The external parts and os uteri were properly constructed, and the shoulder of the child could be felt behind the membranes. The operation of turning was performed, and a healthy female infant delivered, upon which the right side of the abdomen sunk in while the left continued prominent. In an hour the labour-pains recurred, and on examining the state of the parts, Dr. Geiss found, that after passing the os uteri, the finger came in contact with a membrane distended by fluid, and protruding through an anular opening towards the left side, while the navel string of the child already delivered, extended upwards into a cavity like the uterus in ordinary circumstances. On further examination, he found the belly of a second child presenting at the accessory orifice, and therefore performed the operation of turning, and brought into the world a stout still-born male child, which was soon recuscitated. As no placenta followed for some time, he proceeded to assist the separation of them, and had then an opportunity of completely satisfying himself, that his patient had a double uterus. The right placenta came away first, and the right womb contracted vigorously; the left placenta followed, but the uterus of that side contracted slowly, and the woman therefore lost a good deal of blood. Two months afterwards the mother and both children were in good health. Two years before, she had brought forth a single child, and the labour was tedious, and required manual aid to accomplish.—Ibid.

MISCELLANEOUS.

Rate of Sickness. From returns made by upwards of seventy Friendly Societies, situated in sixteen different counties in Scotland, embracing periods of 3, 10, 20, 30, 40, and even 50 years, and comprising upwards of 100,000 members, the following schedule has been deduced:

Average Sickness for every Individual in each year.

<table>
<thead>
<tr>
<th>Age</th>
<th>Weeks</th>
<th>Days</th>
<th>Hours</th>
<th>Proportion of sick members.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 20</td>
<td>-</td>
<td>0</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>20—30</td>
<td>-</td>
<td>0</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>30—40</td>
<td>-</td>
<td>0</td>
<td>4</td>
<td>19</td>
</tr>
<tr>
<td>40—50</td>
<td>-</td>
<td>1</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>50—60</td>
<td>-</td>
<td>1</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>60—70</td>
<td>-</td>
<td>5</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Above 70</td>
<td>-</td>
<td>16</td>
<td>3</td>
<td>19</td>
</tr>
</tbody>
</table>
This table was prepared by a committee of the Highland Society of Scotland, to whom the returns were made. It will be observed that the proportion of sickness is much smaller than that in the British army, as heretofore given. The reasons of this are very manifest.

_Edinburgh New Philosophical Journal._

_Quackery._ In these days of quackery and puffing, the following anecdotes may afford some amusement, and at least show that the empirics of the present day are genuine descendants of the old stock:

Dr. Rock and Dr. Franks were two famous quacks in London about 1759 and 1760. Dr. Frank's handbill contained this admonition: "Be not Rocked into eternity by that vain and impudent pretender, Dumpling Dick, who still lives at the gate of an inn, where he was once porter."

Dr. Rock's bill contains this sarcasm: "If you would avoid destruction, avoid the Old Bailey, for there lives an old soldier, discharged by the beat of drum, who has killed his thousands, but not in battle; his pills are more fatal than were his bullets."

A contemporary of Rock lecturing once from his chariot, concerning a Solar Pill, said, "That it was the property of this inestimable and divine pill to stretch the line of existence to the longest possible extent, to counteract the operation of time upon the external form, to cheer, comfort, strengthen and renovate the internal system, to irradiate and gild the gloom of age, to diffuse a gleam of sunshine, even in the hour of death." "I must stop here," said the learned doctor.

Rock one day lecturing on the efficacy of his pills for a certain disease, observed Hogarth and Hayman in the crowd, and probably fearing their satiric pencils, said, that "although professional honour prevented him from stating the cases he had cured, yet there were two gentlemen, whom he had no doubt would testify to the truth of what he advanced respecting the pills." They instantly made their way through the crowd, not however without some laughter at them._—European Magazine._

_The Plague._ "I do not agree with Volney, on the subject of the plague, which, in Egypt, I have no doubt is indigenous. It originates in the stagnant waters left by the Nile, and all stagnant waters in hot climates produce disorders which have more or less resemblance to it. Is not this fact sufficient to prove that it rises in Egypt, _viz._ that when the inundation is great, the plague ensues; when it is small, the plague fails? Without intercourse with Egypt, they have no plague in Constantinople. Its progress is from the South._—Otter's _Life and Remains of Rev. E. D. Clarke._ Amer. edition, p. 335.
Method of recognising the stains caused by blood on steel instruments. —[Journal des Progres des Sciences, t. iv. 1827.] Professor Orfila has recently made some experiments on this subject with the view of illustrating certain questions in Medical Jurisprudence,—in which many doubts are entertained whether stains on steel instruments are caused by blood, by acid juices, or by rust; and the following are the criteria which he proposes. 1. When the instrument is heated to 80 or 90° F. the stain becomes brighter if it is caused by blood, but is not altered if it is caused by rust or lemon juice. 2. A drop of hydrochloric does not alter a blood-stain, but dissolves rust or acid stains. 3. The blood-stain steeped in water parts with its colouring matter to that fluid, and the red colour is retained on filtration, while stains caused by rusting or by vegetable acids either do not tinge water at all, or, if they cause a reddish-brown muddiness, it is removed by filtration. 4. The colouring matter derived from the blood stain may likewise be recognised unequivocally by its chemical properties, and in particular by the effect of chlorine: A minute quantity of chlorine turns it green, a larger quantity decolorizes it altogether, and an infusion of galls added to the decolorized solution causes a dark-red precipitate, which is the colouring matter in union probably with tannin. 5. Strong nitric acid destroys the colour of the stain caused by blood; the diluted acid dissolves it, forming a red solution, which precipitates red with infusion of galls.

UNIVERSITY REGISTER.

Historical account of the Medical Department of the University of New-York.

[Continued from p. 159.]

3. In the Annual Reports for 1793, 1794, 1795, and 1796, no mention is made of the number of students attending the medical lectures, although the gross number attending both departments is sometimes given. Subsequently the following are stated:

<table>
<thead>
<tr>
<th>Year</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1796-7</td>
<td>(about) 30</td>
</tr>
<tr>
<td>1797-8</td>
<td>22</td>
</tr>
<tr>
<td>1798-9</td>
<td>22</td>
</tr>
<tr>
<td>1799-1800</td>
<td>19</td>
</tr>
<tr>
<td>1800-1</td>
<td>35</td>
</tr>
<tr>
<td>1801-2</td>
<td>50</td>
</tr>
<tr>
<td>1802-3</td>
<td>40</td>
</tr>
<tr>
<td>1803-4</td>
<td>35</td>
</tr>
<tr>
<td>1804-5</td>
<td>48</td>
</tr>
</tbody>
</table>
The graduates of this school, according to the catalogue already referred to, were the following. We have added the subject of their inaugural dissertations whenever we were able to ascertain them.

1793.
Samuel Borrowe, *Cynanche Trachealis*.
John B. Hicks.
Jotham Post, *Against the Existence of Muscular fibres in the vessels*.
Joseph Young.

1794.
David G. Abeel, *Dysentery*.
Peter Irving, *Influenza*.
Henry Mead, *Cholera Morbus*.

1795.
Peter Anderson, *Diarrhæa Infantum*.
William M. Ross, *Carbon*.
Timothy F. Wetmore, *Puerperal Fever*.

1796.
Alexander Anderson, *Chronic Mania*.
Winthrop Saltonstall, *Chemical and Medical History of Azote*.

* In a pamphlet, entitled, "Observations on the Establishment of the College of Physicians and Surgeons in the City of New-York," &c. &c. *New-York*, 1811, the following list is given as taken from the records of Columbia College. We only quote the years corresponding.

<table>
<thead>
<tr>
<th>Year</th>
<th>Students</th>
<th>Total</th>
<th>Total reported by the Regents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1796-7</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1797-8</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1798-9</td>
<td>34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1799-1800</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1800-1</td>
<td>34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1801-2</td>
<td>51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1802-3</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1803-4</td>
<td>34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1804-5</td>
<td>47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1805-6</td>
<td>65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1806-7</td>
<td>55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1807-8</td>
<td>55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1808-9</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>545</strong></td>
<td></td>
<td><strong>516</strong></td>
</tr>
</tbody>
</table>
University Register.

1797.
William Bay, Dysentery.
Alexander Hosack, Yellow Fever.

1798.

1802.
Joseph Bayley, Yellow Fever.
Nicholas Quackenbos, Dysentery.
James V. Brower.
Richard L. Walker, The perspirable fluids of the human body.

1803.
Isaac Foster, Dysentery.
James R. Manly, Yellow Fever.
Samuel Scofield, Vaccina.

1804.
William Barrow, Lumbar Abscess.
Ezekiel Ostrander, Puerperal Fever.
Daniel D. Waters, Inflammation.

1805.
Thomas Cock, Respiration.
Benjamin Kissam, Fistulo in Ano.

1806.
Valentine Mott, Statice Limonium.
William James Macneven, M.D. Vienna, ad eundum.

1807.
Allire R. Delile, Pulmonary Consumption.
William L. Lytton, Dropsey.

1810.
Samuel W. Moore, White Oxide of Bismuth.
Henry U. Onderdonk, Stone in the Bladder.

In 1806, the law establishing county medical societies, and also a state medical society was passed. The details of this act are given in an early volume of this Journal. The state society was organized in February 1807.

On the 3d of March 1807, the following entry appears on the minutes of the Regents:

"The memorial of the medical society of the county of New-York, praying an act of incorporation as a College of Physicians and Surgeons under the patronage of the Regents, was received and read, and referred to Dr. Linn, Mr. Jenkins, Mr. De Witt, Judge Spencer, and Mr. Rutgers."

Accompanying this was a communication to the Regents in the following words, from Dr. Nicholas Romayne.

"That your memorialist is president of the medical society of the
country of New-York, incorporated under the laws of the state, and that he is also appointed by said society their delegate and commissioner to the medical society of the state, and is otherwise charged by the resolutions of said society to pay due attention to the views of said society, so far as they respect the promotion of medical knowledge and the cultivation of the sciences relating to medicine. That the said society is, with the other medical societies of the state, directed by law to examine students of medicine, and to license such as may be qualified to practise as physicians and surgeons, or both. That the said society being impressed with the importance to the public that a system of medical education should be instituted under their inspection, have directed your memorialist to present to your honourable body in their behalf, their memorial respecting the same, to the end that by the aid of your honourable board the members of said society may be incorporated by the honourable the legislature, into a College of Physicians and Surgeons, under the direction, inspection, and patronage of the Regents of the University, and which memorial your memorialist has the honour to present herewith.

"That your memorialist is informed that the honourable the legislature of the state, have already invested your honourable board with all the powers to institute a college of physicians and surgeons, as is desired by the medical society of the county of New-York, and your memorialist therefore prays, in behalf of said society, and of each and every member thereof, that all the members of the said society, may be incorporated into a college of physicians and surgeons by the Regents, under their direction and patronage, with all such rights and privileges, as in the wisdom of said Regents may conduce to the promotion of medical knowledge and the public good.

"Your memorialist humbly begs leave to state to your honourable board, that under the ordinary circumstances of exercising the medical profession, it is difficult for any physician or surgeon in full practice, to be a medical teacher, as the branches of anatomy, chemistry, botany, and other branches of medicine require much preparation, study, and time. Your memorialist also begs leave to state, that every physician and surgeon in the ordinary practice of his profession, may be rendered more useful to the community by occasionally visiting a school of medical information, when combining an increase of knowledge, with the inspection of the duties of the teachers. Your memorialist therefore hopes, that the judicious arrangement of the honourable the legislature, investing the Regents of the University with the powers of appointing medical professors and the members of the college, of inspectors of the performance of their duties, a school of medicine may be established in the city of New-York, not only honourable to the state, but of national importance, and which may contribute to diffuse among mankind the blessings of science."

At the same time, a remonstrance against the proposed incorporation, signed by forty-nine members of the medical society of the county of New-York, was presented. It is as follows:
That your memorialists "view with extreme concern, a petition now presented, or about to be presented, to your honourable body from the society aforesaid, soliciting an act of incorporation as a college of physicians; a measure which they conceive to be not only altogether useless and unnecessary, but in every respect incompatible with the interest of the existing medical institutions of this state. They forbear to enter into a particular detail of the manner in which this petition passed their body, but they conceive it to be their bounden duty explicitly to declare, that although that petition appears as their official act, yet, that it cannot in justice be considered as the free interpretation of the wishes of the society, inasmuch as the said society was specially convened upon a subject totally irrelevant to the object of their present petition—advantage was taken of the small number of members collected, every necessary document (by previous arrangement) was prepared, and the object of the petition carefully concealed from a great portion of the members before they met. It was hastily passed through the society, without sufficient deliberation, contrary to the established usages of all incorporations, and is now made to appear before you, as their act, after mature consideration.

"They in an especial manner, remonstrate against the impropriety of unnecessarily creating more colleges, because a medical college, as part of the general establishment of Columbia College, has existed in this city for many years, where all the branches of medicine are faithfully and diligently taught by public professors. Your memorialists are informed that an understanding exists between the Regents of the University and the Trustees of Columbia College, that no additional medical school shall, at any time, be sanctioned by the Regents, while the duties annexed to the professorates of medicine in Columbia College are fulfilled.

"Your memorialists beg leave to remark, that this attempt to convert a county society into a college of physicians, would directly clash with the interests of the other county societies, and with the duties of the medical society of the state, and at all events, an attempt of this kind to change its name and character, at a moment when it is scarcely organized, would lead to endless mischief and confusion, while no possible good could arise out of it. They further remark, that this society does at present possess, in their opinion, every necessary power to license persons in the practice of physic and surgery, without interfering with the medical establishments of colleges and universities.

"Influenced by these considerations, which your memorialists deem all important, they confidently hope that the legislature of the state and the Regents of the University will see the evident impropriety (under existing circumstances) of creating a college of physicians and surgeons."

On the 10th of March 1807, the committee to whom the above memorial and remonstrance had been referred, reported "that they had met together and maturely considered, as well the application for the instituting by the Regents of the University a college of physicians and surgeons in
the city of New-York, as the remonstrance against the same, and they are unanimously of the opinion that by granting the prayer of the memorialists, medical science will be promoted; they therefore recommend, that a college of physicians and surgeons be established in the city of New-York, pursuant to the power vested in the Regents of the University, by the statute of the 24th of March 1791.

"Thereupon,

"Resolved, That the said report be accepted, and that the secretary prepare an instrument in writing for incorporating the said college by the name and description of 'the College of Physicians and Surgeons in the City of New-York.'"

On the 12th of March, a draft of a charter was presented and agreed to, It is as follows:

"Whereas the Medical Society of the county of New-York have presented unto us their memorial, under the seal of the said society, testified by Archibald Bruce, secretary; stating that their efforts to contribute to the diffusion of science, and the improvement of the medical profession, would be more successful, if they were directed under the patronage of the Regents of the University of the state, and were incorporated as a College of Physicians and Surgeons, and praying us to favour the views of the said society, so far as they are connected with the public good, and with which the improvement of the medical profession is intimately connected, and that the said society may be incorporated as a college of physicians and surgeons, under our patronage.

"And whereas Nicholas Romayne, president of the said medical society of the said county of New-York, has also presented unto us his memorial in writing, stating that the said medical society is directed by law to examine students of medicine, and to grant licenses to such as are properly qualified to practise physic or surgery, or both;—that the said society are impressed with the importance to the public, that a system of medical education should be instituted under their inspection, and praying us, in behalf of the said medical society of the county of New-York, and of each and every member thereof, that all the members of the medical society of the county of New-York might be incorporated by us into a college of physicians and surgeons, under our direction and patronage, with all such rights and privileges as might conduce to the promotion of medical knowledge and the public good: And we having taken the said memorials into our consideration, and being satisfied that a college of physicians and surgeons, established in the city of New-York, for the sole purpose of promoting medical science, may be of public importance in diffusing the knowledge of the healing art:

"Be it therefore ordained by us, by virtue of the act entitled 'An act to enable the Regents of the University to establish a college of physicians and surgeons within this state,' passed the 24th day of March, 1791, and we do, by these presents, ordain, grant, and declare, That a College of Physicians and Surgeons, for the promotion of medical science, and diffusing the knowledge of the healing art, shall be, and is hereby established in
the city of New-York, in this state; and that Sir James Jay, James G. Graham, Alexander Sheldon, Samuel Latham Mitchell, William Livingston, Isaac Sergeant, Peter C. Adams, John Ely, Hugh Williamson, William McClelland, William Wheeler, Morris Willard, John Stearns, Philip Smith, Westel Willoughby, Caleb Sampson, Dunforth Shunway, Hugh Henderson, Gurdon Huntington, James Moore, John H. Frisbie, Barnabas Smith, Reuben Hart, Jesse Shepherd, Thomas B. Whitmarsh, David R. Arnell, Lyman Cook, John M. Mann, James Smith, Samuel Bard, Samuel Stringer, Hunloke Woodruff, Joseph White, Ebenezer Sage, Richard Udall, John Smith, Charles D. Cooper, Elias Willard, Jacob Outwater, Benjamin De Witt, Abraham Cornelison, David Hasbrouck, Charles Mitchell, Felix Pascalis, Samuel Torbert, Joshua E. R. Birch, John Riddel, George Anthon, John I. Coventry, Gardiner Jones, Philip Turner, Lewis Faugeres, Samuel Nesbit, John Onderdonk, William Moore, Nicholas Romayne, James Tillary, Archibald Bruce, Valentine Seaman, David Hosack, John R. B. Rogers, Wright Post, Edward Miller, William Hamersley, James S. Stringham, John H. Douglass, George W. Chapman, William James M’Nevin, John D. Jaques, Malachi Foot, Andrew Morton, John D. Gillespie, Alexander Hosack, Philip D. Kettletas, John Clark, Charles Buxton, Michael Degray, Daniel B. Cornelius, Joel Hart, Abraham Brower, John Wilson, Eloy Berger, Richard S. Kissam, Andrew Hunt, Benjamin Prince, Beekman Van Beuren, John Hicks, Joseph Bloodgood, Matthew Wendell, Samuel Bradhurst, John Stone, Baron A. De Carendeffez, George D. Clussman, Samuel Osborne, Benjamin Low, Joshua Secor, Benjamin Rockwell, Shadrack Ricketson, George C. Quackenbos, Robert Thorn, Abraham Losier, and all others who are now members of the medical society of the county of New-York, and all physicians and surgeons now resident in the county of New-York, and authorized by law to practise in their several professions, shall be the present trustees or members of the said college; and that the said trustees or members and their successors, shall be a body corporate and politic in fact, and in name, by the name of 'The College of Physicians and Surgeons in the City of New-York,' and shall have perpetual succession, and by that name shall be in law capable to sue and be sued, to plead and be imploaded, to answer and be answered unto, to defend and be defended in all courts and places, and in all matters and causes whatsoever, and to purchase, take, hold, enjoy, and have, lands, messuages, tenements, hereditaments, and real estate, in fee simple, or for term of years, or lives, or in any other manner whatsoever; and also goods, chattels, books, monies, and all other things, of what nature soever; Provided always, that such estate, as well real as personal, which the said college is hereby authorized to hold, shall not exceed the sum of one hundred and fifty thousand dollars, current money of this state; and that the trustees or members of said college shall and may have a common seal, and may alter and renew the same at their pleasure.

"And it is hereby further ordained, granted, and declared, That the trustees or members of the college of physicians and surgeons hereby es-
tablished, shall and may meet together on the first Tuesday in May next, at twelve o'clock of that day, in the City-hall of the city of New-York, or at such other hour and place as may be directed by the Chancellor of the University, and shall then elect by ballot, a president, vice-president, register, treasurer, and thirteen censors, who shall hold their respective offices for one year, and until others shall be chosen in their places; and the first Tuesday in May shall be for ever after the day for the anniversary meeting of said college of physicians and surgeons, and on which day the president and other offices before enumerated shall be elected as aforesaid; and their quarterly meetings shall be on the first Tuesday in August, November, and February in every year; and that on the days of their anniversary meeting; and at their quarterly meetings, but at no other time, they the said trustees or members, may enact such by-laws, rules, and regulations, relative to the affairs, concerns, and property of said college, and relative to the duties of their president, vice-president, register, treasurer, censors, and other members, as they or a majority of the members of such annual or quarterly meetings may think fit and proper: Provided such by-laws, rules, and regulations be not contrary to, or inconsistent with the constitution and laws of this state, or the United States, or the ordinances made by us or our successors, Regents of the University of this state. And the register of the said college shall provide a book, in which he shall make an entry of all the resolutions and proceedings which may be had from time to time, and also the annual reports relative to the state of the treasury, and all such other things as a majority of the members of the college shall think proper, to which any member of the college may at any time have recourse; and the same, together with all books, papers, and records, which may be in the hands of the register, and be the property of the college, shall be delivered to his successor in office. And the treasurer of the said college shall receive and be accountable for all monies which shall come into his hands, and shall pay the same in such manner as may be directed by a majority of the members of said college convened at the anniversary or quarterly meetings, and by a warrant for that purpose, signed by the president or vice-president.

"And it is hereby further ordained and declared, That in case it should at any time happen that an election of the said officers should not be made on the day when, pursuant to this ordinance, it ought to have been done, the said corporation shall not for that cause be deemed to be dissolved, but it shall be lawful on any other day within three months thereafter to hold and make an election for the said officers, in such manner as shall have been regulated by the by-laws of the said corporation.

"And it is hereby further ordained, granted, and declared by us, That the said college of physicians and surgeons shall, as far as they are able, at all times, provide suitable apartments for all such professors as shall hereafter be nominated and appointed by us in and for said college, and which professors shall have the style and title of 'Professors of the University of the State of New-York for the College of Physicians and Sur-
and that all the members of said college shall be privileged, from
time to time, and all times, to attend, inspect, and notice all lectures, or
other mode of teaching by the professors in said college appointed by us;
and that, in case of death or resignation of any professor, or other vacancy
in said college, a majority of the trustees or members of said college, at
any of their meetings, may appoint lecturers in any branch of medicine,
or of the sciences connected therewith, until such time as our pleasure be
known respecting the same, or professors be appointed by us; and that it
shall and may be lawful, at all times, for them the said trustees or members
to appoint lecturers in said college, in any branch of science, for them-
selves, and for their own instruction.

"And it is further ordained, granted, and declared, That the president,
vice-president, censors, and all others, the trustees or members of said
college, shall carry and put into full effect, all our ordinances respecting
the said college, as well with respect to education as all other matters and
things, and shall pay due attention towards establishing and preserving for
the said college an anatomical museum and chemical laboratory and botan-
ic garden, and shall make an annual report to us in writing, or to the
Chancellor of the University, in the month of January in every year, re-
specting the funds and property of the said college, and all matters and
things relative to said college, and the students and professors thereof.

"And it is further ordained, granted, and declared, That twenty-one
trustees or members of the said college may form a board to do business at
any of the anniversary, quarterly, or extraordinary meetings; and that the
president, or in his absence, the vice-president of said college, shall appoint
and direct a special or extraordinary meeting to be called of the trustees
or members of said college, at any time or place he may think proper, pro-
vided application be made to him in writing for that purpose, signed by
thirteen trustees or members, and the said meeting be previously advertised
for six days in two of the newspapers printed in the city of New-York; and
that at all the meetings of the college, in the absence of the president, or
vice-president, the senior censor on the list of the college then present shall
preside; and that the trustees or members of said college may, at any of
their anniversary, quarterly, or extraordinary meetings, adjourn from day
to day.

"And it is further ordained, granted, and declared, That the president,
vice-president, trustees, or members of said college may, at any time, and
at all times, recommend to us any person residing in the county of New-
York, and lawfully authorized to practise physic and surgery, or any phy-
sician or surgeon, or person eminent for learning and talents, to be a trus-
tee or member of said college of physicians and surgeons; and any physi-
cian and surgeon resident for two years in the county of New-York, being
of good moral character, and authorized by law to practise in his profes-
sion, may apply to us to be nominated and appointed a trustee or member
of said college; and that the said college may direct that the president of
the said college grant appropriate diplomas, under the hand of the president
and seal of said college, testified by the register, certifying the name of every such trustee or member of the college.

"And be it further ordained and declared, That, reserving to ourselves and our successors, Regents of the University of this state, all powers to appoint professors in said college, and also all powers to appoint and displace any trustee or member of said college, now nominated and appointed by this charter, or hereafter to be appointed by us, or our successors; and also reserving all powers to confer degrees on any member, or trustee, or student of said college, which, in our opinion, and in the opinion of the president and other trustees and members of said college, may be worthy of any literary mark of distinction, in such manner as may be directed by us; and also reserving to ourselves and our successors, the right of appointing fellows and honorary members for said college, and also of making such further grants or ordinances as we and our successors may find necessary and useful for said college; and also reserving to ourselves and our successors the right to alter and modify this ordinance, establishing the said college, whenever we or our successors shall deem it necessary or expedient.

"We do finally ordain, grant, and declare, That the said trustees and members of the College of Physicians and Surgeons in the City of New-York, and their successors, for ever, shall enjoy all the corporate rights, privileges, and immunities which are hereby granted.

"In testimony whereof we have caused our common seal to be affixed to these presents the twelfth day of March, in the thirty-first year of the independence of the United States, and of our Lord one thousand eight hundred and seven.

"[L.S.A.] MORGAN LEWIS.

"By command of the Chancellor,

"FR. BLOODGOOD, Secretary."

[to be continued.]

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UNIVERSITY OF THE STATE OF NEW-YORK.

College of Physicians and Surgeons, — May 20th, 1828.

Whereas the regents of the University have appointed the last Tuesday of October of each year, as a semi-annual commencement of the college of Physicians and Surgeons in this city, for the purpose of conferring the degree of Doctor of Medicine on such candidates as may be found qualified to receive it; notice is hereby given, that application must be made to the Registrar, by all who wish to become candidates for the degree of Doctor of Medicine at the October commencement, on or before the first Tuesday of September, that they may receive their several examinations before the Faculty of the College, which will meet for that purpose on the Tuesday following.

By order of the Board of Trustees,

N. H. DERING, M.D. Registrar.
QUARTERLY BIBLIOGRAPHICAL NOTICES.


Review in our next.


The principal object of Mr. Wallace, in this volume, is to remove the prejudices which appear to him to subsist in Great Britain against an important external remedy in many severe diseases, the value of which has been attested by Larrey, Percy, Dupuytren, Pelletan, Richerand and Roux. With a similar view we now recommend his work to the general notice of American physicians, on whom the treatise of Larrey, republished in this country, does not seem, as far as we are informed, to have produced all the effect to which it was fairly entitled. The advantages enjoyed by Dr. Wallace, in obtaining experience, have been very great, and he has evidently not neglected them. For eight years he has been connected with the Dublin Infirmary for cutaneous and rheumatic diseases; and he has set a laudable example to medical men, of improving the opportunities which such a connection affords for cultivating our art, but which are, either from incapacity, or carelessness, or utter apathy, too frequently overlooked. In this as well as the volume on chlorine, noticed under the next head, Dr. Wallace displays no ordinary powers of observation and judgment, and the fact of his volumes having already become popular in his own country, is no slight evidence of the esteem in which he is held. It is only necessary for the profession in the United States to become acquainted with the labors of Dr. Wallace to appreciate them; and we would avail ourselves of this opportunity to impress upon the mind of every physician connected with a public institution, to imitate his example, and emulate his zeal in extending the boundaries of medical science.


In a very unassuming, but strictly philosophical manner, Dr. Wallace
has exposed in this volume the advantages to be derived from the proper application of this gas, in a numerous class of diseases which are frequently occurring in practice, and not seldom perplexing the physician who relies exclusively on the aid of mercury in their treatment. The Nitro-muriatic acid bath was for a long time used as the dernier resort in such cases, on the recommendation of Dr. Scott of India. It was however found so uncertain in its effects, that it was soon abandoned, and is now sparingly used. Some casual events having called the attention of Dr. W. to this remedy, he sought to ascertain the proper method by which its remedial agency might be permanently secured and rendered uniform. In his researches he was chiefly guided by the true spirit of inductive reasoning, and the result has been the present volume. In the first part the author discusses the important subject of medicines which act on the skin, and through this on the internal organs of the body. He establishes the fact, that these remedies exercise a much more efficient influence on these last, when exhibited in a gaseous form, and after the external organ has been exposed for some time to the action of increased heat, by which its absorbent powers are excited to increased action. Our author next turns his attention to diseases of the Liver, which he considers as occurring more frequently, and more frequently complicated with, and aggravating other diseases than was formerly imagined. He then relates cases in elucidation of his views, all of which are interesting, and deserve attention. In the third part Dr. Wallace considers the general agency of chlorine, and the best mode of employing it. Its immediate action appears to be exerted on the skin, causing a stinging sensation, followed by itching and smarting, and an increase of perspiration. The most important effect is a rash, or eruption of very small papulae over every part of the body, especially on the back, breast, abdomen, and extremities. This is always to be regarded as a favourable event. The mucous membranes generally partake of this action, and it is extended to almost all the important functions of the body. We would be pleased to see the remedy extensively tried in this country, by intelligent and liberal physicians. The attempts of empirics, or those associated with empirics, are not likely to prove serviceable to the cause either of science or of humanity. The same industry and ability are displayed by Mr. W. in this, as in the preceding work.


5. Litterarische Annalen der gesammten Heilkunde herausgegeben von Dr. J. F. C. Hecker, Professor, &c. 6 Nos. from July 1827, to July 1828. In exchange.

Review in our next.


8. The Boston Medical and Surgical Journal. 5 Nos. from No. 14 to 18. In exchange.

9. The Western Journal of the Medical and Physical Sciences. Edited by Daniel Drake, M.D. No. 2


From the author. We have read with much satisfaction this very creditable production of our countryman and fellow-citizen Dr. Scott.


These numbers are occupied with a very valuable paper from Dr. Thomas Thomson, of Glasgow, on the chemical examination of a number of American minerals.


Under the form of a Manual, this work embraces the whole system of practical obstetrics. While the author has been careful to exhibit all those facts, from which the principles of the science are deduced, and upon which the precepts of art rest, as the evidence of their utility, he has been equally solicitous to exclude every thing like irrelevant matter, which could only tend uselessly to complicate the subject, and divert the attention of the student. The author first treats of what may be called obstetrical anatomy; he then details with clearness and precision, the whole operation of natural labours; hence he deduces the principles of the science of midwifery; on principle he builds precept; he then teaches the applica-
Obituary.

tion of precepts, by describing in detail the whole manual exercise necessary to fulfill the indications of every case of unnatural, or preternatural labour. To teach an easy and skilful method of operating is the object of the author: its acquisition forms the skilful midwife, in contradistinction to the mere scientific speculator. The method of the whole work is most simple, and its style concise and perspicuous. While it is calculated to prove a useful pocket companion for the practitioner, it is also designed as a guide to the student, who is ambitious of attaining a practical knowledge of the obstetric art. This work will be republished in this city.

The honorary degree of Doctor in Medicine has recently been conferred upon Dr. Henry Bowen, of Myerstown, Pennsylvania, by the Alleghany College.

OBITUARY.

Died on the 14th of June, in the 63d year of his age, Wright Post, M.D. late Professor of Anatomy, and President of the College of Physicians and Surgeons of New-York.

In the death of this truly eminent physician, a loss of no ordinary character has been sustained. For the last twenty years he was the undisputed head of the profession in this city, and his death has left a breach which will not soon or easily be filled. Of the means by which so enviable a distinction was gained, it is not our purpose at present to speak. They are fit subjects for future eulogium, and will be duly noticed, when his character comes to be delineated for the emulation and imitation of those who survive. Deeply sensible of their loss, the Medical Society of this city have assigned to Professor John Augustine Smith, the task of commemorating the private virtues and public services of their deceased associate.
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The course of nature in continuing the human family subject to the same diseases from the most remote period to the present time, has preserved a remarkable uniformity. There are, however, deviations from the direct line of her march; and among these, there is reason to believe, that the terrible disease which is the subject of this essay, is, from its comparatively modern origin, conspicuous. No description of it appears in the writings of the Greek physicians, and it is not probable that a complaint marked, as this is, by a prominent characteristic, would have been allowed by those accurate and minute observers of disease, to have passed unnoticed if it had existed. Nor is it till we descend in the history of medicine in the latter part of the seventeenth century, that we discover any mark of its influence over mankind; and then it is so obscurely traced, as to be with difficulty recognised. But in the following century, several good accounts of the disease were given to the world; of which one by André, of Versailles, published in 1756, may be considered the first accurate description of its distinguishing features.

For a considerable time after the publication of this surgeon, the notices of the disease continued few and at distant
intervals; but of late years cases have been brought before the public in greater numbers annually, proving that the complaint is remarkably on the increase.

In connexion with the history of the complaint, it ought to be mentioned that until within a few years, it was thought to be confined exclusively to the nerves of the face; but its repeated occurrence in various other parts, has proved its more general diffusion, and rendered it probable that all the nerves are subject to it—"cerebral, spinal, or ganglionic."

The local habitation assigned to the complaint required a corresponding appellation; and, hence, Dr. Fothergill, who was the first to publish a history and description of it in the English language, called it "Faciei Morbus Nervorum Crucians." A variety of other names, as tic doloureux, hemicrania idiopathica, trismus dolorificus, autalgia dolorosa, have been given to it; but that employed by Dr. Fothergill, was continued by most English writers until the liability of all the nerves of the human frame was discovered, and a generic term for the disease became necessary. To Professor Chaussier we are indebted for the term Neuralgia, which supplied the deficiency so well, and was considered so expressive of the nature of the affection, as to be generally adopted.

**Causes.** On the important subject of the remote causes of this dreadful disease, we are not able to say much with certainty. This is a subject of regret, as it prevents any account of it from being complete, and is more to be deplored from the consideration, that it is believed much of the difficulty in curing the complaint would be removed, could we have correct views of its etiology. A number of derangements of the body, both local and constitutional, have been found to precede and accompany neuralgia, and these have been considered, and from their removal eradicating the disease, no doubt are, exciting causes.

The following have been mentioned as local causes of the complaint. Irritation has sometimes produced it, as from an ulcer connected with a branch of a nerve, an anastomosis between the affected nerve and that of a decayed tooth, or from
a carious bone. Injuries from blows, falls, pressure on nerves during parturition, seem to have produced complaints very much like it, if not actually neuralgia. A violent cold appears to be not an uncommon cause. Debilitating discharges in the weak and delicate, as haemorrhage or diarrhoea, are said to be causes of painful affections of the nerves.

The constitutional causes are considered more numerous and of much more frequent occurrence. Of these two have been supposed to be discovered which are not removable: in one, Dr. Pemberton's case, it was thought to be an irritation of the brain produced by a bony excrescence; in the other, it was considered an organic disease of the base of that organ.

But the most general cause is now considered to be a depraved state of the system. This depravity, the opinions of authors and the effects of remedies, proves to be of various kinds. Dr. Fothergill thought he traced it to a cancerous habit of body; in some instances it has been supposed to arise from a syphilitic taint; in others it has been considered dependent on a rheumatic diathesis; and several authors refer it to an arthritic state of the system. Dr. Armstrong attributes it to a venous congestion, or an increased action in the arteries of the brain. The editor of the Medico-Chirurgical Review thinks it commonly the case, that it arises as a consequence of debility or derangement of function of some internal organ, as of 'the stomach or intestines, at a great distance from the seat of the actual pain.'

Although neuralgia has been considered symptomatic of so many complaints, it seems not to be denied that it is idiopathic also.

Character. The only constant symptom of neuralgia is pain, which is of a peculiar lancinating kind, and corresponds in its course with that of the nerves affected. This pain, although varying in degree in different constitutions, exceeds that of every other disease, 'exciting the most exquisite anguish which human nature can possibly suffer without destroying life.' It varies considerably in the different stages of the complaint; in the incipient, the attacks are so brief and slight as to be almost imperceptible; but in the advanced
stage they are lengthened, are more sudden and violent in their occurrence, and quicker in their succession. The continuance of the pain seldom exceeds a minute, when it often remits as suddenly as it came on, leaving no other sensation than a dread of its return, or a slight tenderness and soreness of the part affected. The intermissions are of uncertain duration, seldom exceeding, though often extending to fifteen minutes; they, however, are liable to continual interruptions from numerous exciting causes; thus, a draught of cool air, the action of the muscles of the part affected, or mental agitation, will produce a paroxysm. An accompaniment of the pain, not universally present, but so generally that it might be considered a characteristic of the complaint, is a spasmodic twitching of the muscles of the diseased part. And a singularity of the affection is, that while a slight touch of the diseased part, as alluded to above, will bring on a paroxysm, it may be roughly pressed, or rubbed without inconvenience, and during a paroxysm with relief. It is, perhaps, a consolation to the sufferers by this disease, that, notwithstanding the dreadful severity of the pain, it has rarely produced death; and it seems, in general, to exert little influence in subverting the foundations of life.

Although every part of the system is liable to neuralgia, yet the severest and most common form of it is seated in the face. In this situation, the pain, though sometimes extending to the greater part of the head, is generally confined to one side only, and frequently to but a part of that, as one eye, the upper lip and nose, or the gums.* The actual seats of the complaint are most frequently the portio dura of the seventh, and the superior maxillary of the fifth pair of nerves; though the instances of its attacking the superior orbitary, and inferior maxillary branches of the latter nerve are numerous. But it has been observed, that in whatever nerve the disease may originate, if it continues, it will spread until every nerve of the face is affected.

* Medico-Chirurgical Review.
There is nothing peculiar in the disease situated in other parts of the body, excepting what may arise from the length of the nerve affected. The racking and lancinating pains appear, as in the face, to shoot along the branches of the diseased nerves towards their trunks; and sometimes extend from the extremity of a limb through its whole course, and even into the neck or loins.

Age &c. most liable. Neuralgia has been found in nearly all ages; in both sexes; in the robust and in the delicate. But it most commonly arises in advanced life, seldom attacking under the age of thirty; women appear to be considerably more subject to it than men; and persons of a delicate irritable habit and nervous temperament, are much the most frequently afflicted.

Diagnosis. Neuralgia, when seated in the face, has been occasionally mistaken for hemicrania, tooth-ache, and abscess of the antrum; and in any part may be mistaken for rheumatism, neuritis, and periostitis. From these complaints it is not difficult to make a distinction, when an accurate inquiry is made into the origin, progress, and present symptoms of the disorder. Hemicrania is known by the pain being general over the head; whereas in neuralgia it accurately follows the ramifications of the affected nerve. Tooth-ache may be distinguished by the depth and pungency of the pain; its permanence and confinement to one spot; its absence from convulsive twitchings. The pain extending into the nose, the pressure on the eye and tumour of the cheek are sufficiently distinguishing characteristics of abscess of the antrum. Rheumatism may be readily distinguished by its fever, redness, heat, and local swelling.

The affection for which it seems most likely to be mistaken is inflammation of the nerves. M. Martinet, of Paris, is the discoverer of the difference between this complaint and neuralgia. Neuritis, he says, he always found seated in the neurilema, or membrane investing the pulp of the nervous fibrils, and never in the nervous pulp itself. The symptoms accompanying the complaint, he states, consist in more or less complete diminution of function in the affected nerve;
in pain of a benumbing as well as lancinating kind, never suddenly intermittent, but generally continued with occasional exacerbations and remissions.

The diagnostic differences between periostitis and neuralgia, I am not prepared to designate with precision. In the former, however, the pain is deeper seated, more constant, with more or less heat present, and frequently a sense of pulsation; it is increased by pressure, and in proportion to its violence; the patient complains of a sense of tumor, which his feelings magnify much beyond its real size; and it terminates, after a longer or shorter time, in resolution, abscess, or gangrene.

Terminations.—The complaint has been said to terminate, in several instances, in a fatal coma. Sometimes it terminates spontaneously, but a long and tedious period is requisite, it having been known to last upwards of twenty years. This termination is effected by the nerve and its ramifications becoming gradually torpified, by the excess of irritation of the disease.* Mr. Swan relates a case where the pains instantly ceased and returned no more, on the supervention of an eruption resembling the nettle rash, which came all over the patient's body; and there are several other instances on record, of the occurrence of other diseases removing neuralgia.

In the Medico-Chirurgical Review† there is an account of a case of neuralgia, which I repeat for its singularity. The affection commenced in the arm, from which there was a metastasis to the chest and stomach, producing in the former a sensation of tightness and stuffing, and in the latter a violent cardialgia, with vomiting of every thing taken. The affection of the chest and stomach continued six months, and then ceased entirely, but a copious diarrhea took their place, and continued for two months. "The neuralgia of the digestive organs now shifted to the uterine system, producing violent pain in the hypogastric region, and suppression of the

* Good's Study of Medicine, Vol. III. p. 196.
† Vol. II. p. 427.
menses.” The patient was now relieved by the application of the moxa to the affected arm.

Proximate Cause.—The variety of theories on this subject exhibit a greater diversity of opinion than is found on any other disputed point of the disease. In the eagerness of authors to fix on something definite, each of the constitutional exciting causes of the complaint has been considered its proximate cause. With regard to these it is only necessary to observe, that as no one of them has been found present in every case, no one can be the proximate cause. Passing over some others that have been assigned, I shall consider two theories that appear to have a pretty general prevalence—those of Dr. Parry and Mr. Swan. The former expressed the opinion that the proximate cause consisted in “an increased vascularity or determination of blood (perhaps amounting to inflammation) to the neurilema of the nerves affected.” That this opinion is not correct, the symptoms of the disease during life would seem to indicate; and Mr. Swan expressly declared that in dissections of subjects who had been affected with neuralgia, there was no alteration in organization, nor any of the effects which are known to follow an inflamed nerve. The same conclusion is to be drawn from Mr. Martinet’s observations. On the other hand, the editor of the Medico-Chirurgical Review says, there is, generally, an increase of heat and vascularity in the part affected; but this, he also states, is found more especially in “the progress of the complaint;” and he seems to consider them as the effects of the nervous irritation. These evidences are sufficient for us to draw the conclusion that the proximate cause does not depend upon a congestive or inflammatory state of the neurilema of the diseased nerve.

The hypothesis of Mr. Swan supposes, that where the disease arises spontaneously, or in some cases, where a slight wound has been inflicted, the complaint is only symptomatic of a general irritability of the brain and nervous system. To this theory it must also be objected that it is not applicable to all cases; for it not unfrequently happens, that the disease arises in individuals enjoying, in every other respect, sound
health; and besides, the author's idea of it gives it a limited operation, which is adverse to the nature of a proximate cause.

Considering these several hypotheses untenable, the question recurs, what is the proximate cause? Difficult as the answer must be from the obscurity of the operations of the nervous system, I conceive, from a view of the character of the complaint, that we are left to seek it in the sentient part of the nerve itself; and it probably consists in an increased irritability and morbid sensibility of its medulla.

_Treatment._ The obstinacy of neuralgia in resisting remedies, frequently equals its severity, often defying the united skill of the most experienced physicians and surgeons. And this from the want of remedies operating directly on the affected nerves, will, it is probable, continue frequently the case; though some part of the failure which has hitherto attended its treatment, may be attributed to a neglect of ascertaining its causes, or a want of correct views of them. It appears to have been too generally considered that the affection is exclusively idiopathic, or arises from an uniform cause, and hence, that a remedy which has proved successful in one instance ought to be equally so in another. Particular views of the proximate cause have led to uniform and unsuccessful plans of treatment. That it is not dependent upon a single cause, is sufficiently apparent from the preceding account of them; and the only way, in most instances, of operating upon the proximate cause, is by the removal of the remote. As these remote causes have been found of various kinds, it is evident that they require a diversity of treatment; the remedy which would be proper for the disease arising from one cause would, it is probable, be pernicious where it arose from another. These considerations seem to demonstrate, that in commencing the cure of this complaint, our first object should be to ascertain its etiology.

A variety of remedies have been employed in the treatment of this terrible disease; but accessions to the number have been made as often experimentally, as from pathological considerations. In the following pages I shall endeavour, as far
as it is practicable, to connect the causes of the disease with a brief view of its appropriate remedies. These remedies may be divided into two great classes. Topical and Constitutional.

**Topical applications.**—The use of this class of remedies has been very much limited, since the discovery that neuralgia has a constitutional, as well as a local origin. This change of opinion, we have reason to believe, has caused them to be improperly neglected. As remedies where the complaint arises from a local cause, they are unquestionably indicated. Again, when the disease evidently originates from a constitutional disorder, and general remedies do not act with sufficient force to enable the system to overcome the nervous affection, topical applications will be found valuable auxiliaries.*

*Cauteries.—André, according to Dr. Good,† succeeded in removing neuralgia permanently, by applying a caustic to the infra-orbital nerve, in one case in which a previous division of the nerve by the scalpel produced only a temporary cure. Neuralgia has been cured by the application of the moxa. “Baron Larrey has had much success with this measure. He applies it repeatedly; burning the part affected ten, twelve, or more times, and following the pain wherever it takes up its domicile.” Another French surgeon, M. Delpech, destroys the diseased nerve by the actual cautery, and when the eschar separates, he does not permit the wound to heal, but keeps up a long continued suppuration.‡

*Removal of irritants.—As the disease sometimes arises from a carious bone or tooth, it is important that it should be discovered and removed; cases which had resisted all other*

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*In illustration of this opinion, I could detail two cases where the neuralgic affections continued after the constitutional diseases appeared to be removed, and where the patients were cured, in a few days, by making caustic issues over the course of the affected nerves.

† Study of Medicine, Vol. III. p. 195.

‡ Medico-Chirurgical Review.
modes of treatment, have been finally cured by removing such an irritation.

Belladonna.—Several cases of neuralgia have been relieved almost instantly, by the application of a strong watery solution of belladonna to the skin over the affected nerve, after a variety of other applications had been resisted. The solution may be made of sufficient strength, by dissolving two drams of the extract in an ounce of water.

Cerussa.—According to Mr. Beddingsfield, Sir Astley Cooper cured a case of neuralgia by paralysing the nerves with cerussa. Two scruples were formed into an ointment, and rubbed on the affected cheek about an hour before the paroxysm was expected. The effect of the lead is reported to have been rapid and striking; the person being rendered comparatively comfortable in a short time from a state of excruciating torment. The carbonate of lead united with opium, and formed into an ointment, is a popular remedy in the French hospitals for this complaint.

Acupuncturation.—This singular remedy has risen into considerable reputation, as a means of curing local pains of a nervous character. M. Berlioz of Paris, Dr. Haime of Tours, and Mr. Churchill of England, seem to have removed diseases of a neuralgic nature, by a few minutes' application of the needle. M. Pellatans says, he has repeatedly seen neuralgia completely cured by one, two, or three applications of acupuncture; and thinks himself authorised to aver that it is a remedy without inconvenience, and almost without pain, which nearly always cures neuralgic pains. In the practice of M. Bally, the application of the needle in some cases of neuralgia, completely cured them; in others it totally failed of ever giving relief. Similar results attended its use in the hands of Dr. Bache of Philadelphia. The writer has been informed, by a respectable physician, of two cases in which the needle had been applied, in one of which it effected a complete cure, and in the other produced great relief. Upon the whole, the mass of evidence is in favour of its efficacy; and as most writers agree that its application is attended with little pain, it is a remedy certainly deserving of a trial.
**Gorrie on Neuralgia.**

The scalpel.—While neuralgia was considered an entirely local disease, the division of the affected nerve was thought to be the only artificial cure. Even since it has been ascertained to be also a general disorder, "from the utter inefficacy of other local and constitutional treatment it has been resorted to;" and perhaps, has attained as much success as most other remedies. This success would probably be greater, if prejudice did not oppose its use till the disease has extended from its primary seat to the neighbouring nerves. It must, however, be acknowledged that there are great objections to the use of the scalpel; numerous instances are on record, where the operation has totally failed in every stage of the complaint; while in others, where it has produced relief, the affection has recurred on the reunion of the divided nerve. Another objection to its employment, at least on the face, is the greater or less deformity it produces on the operated person; and this objection extends to a much better instrument, Sir A. Cooper's curved bistoury.

**Constitutional Remedies.**—It seems to be the opinion of most late writers on neuralgia, that it is exclusively a constitutional complaint. The views I have taken of the nature of the disease, lead me to conclude that it may exist as a strictly local affection; still I agree with those authors who represent it as originating, in the greater number of cases, from a constitutional cause. At the same time, I consider the disorder of the system as, sometimes, an accidental accompaniment, arising from the patient being most susceptible to the attacks of both diseases at a common period of life; and it is not improbable that it may, occasionally, be an effect of the local irritation. But whether the constitutional complaint is a cause, accompaniment, or effect of the neuralgia, may generally be ascertained by attention to the period of its occurrence; and perhaps it is not a material point which it is, for it does not exist long without exerting an influence over the nervous affections, and then it becomes important for the cure of the latter, that the constitutional disorder should be removed.

Those writers on this disease who have assigned to it a con-
stitutional cause, have each employed in the treatment the medicines which accorded best with his pathological views of its origin. These, and others which have been found serviceable in neuralgia I shall distribute into four classes—Alternatives, Anti-rheumatics, Narcotics, and Tonics: each, however, must be considered as requiring the auxiliary means of blood-letting or emetics and purgatives, and an attention to diet and exercise.

**Blood-letting.**—This remedy was recommended by Doctor Armstrong, on the supposition that neuralgia was a complaint of the brain; and by others, on the idea that it consisted in an inflammation of the neurilema of the affected nerve. In cases where the disease is preceded and attended by the symptoms, Dr. Armstrong always found, “such as pain, giddiness, confusion, or some other uneasiness of the head,” &c. bleeding ought not to be omitted. Where, also, the complaint occurs in a full plethoric habit, and is not of long existence, it will be an useful remedy.

**Emetics and Purgatives.**—In whatever diseased state of the constitution the complaint may arise, it will, as a general rule, be found highly necessary to commence the treatment by evacuating the stomach and bowels. Mild emetics are particularly useful, not only in removing the morbid matter in the stomach, but also in exerting a specific effect on the disease, which if they do not completely remove, they always succeed in alleviating. They are the remedies best calculated for breaking up the morbid association by which the disease is continued, and thereby giving a greater facility to the operation of the alternatives, anti-rheumatics, narcotics, or tonics. Purgatives, likewise, besides their benefit in unloading the intestines of feces and excrementitious matters, have the more salutary effects of aiding in restoring the healthy secretion of the digestive organs, and in preparing the system for the full operation of the other means of cure.

I. Alternatives.—The medicines composing this class, united with low diet, constituted Mr. Abernethy's plan of treatment of this deplorable disease; and where it has been sup-
posed to be dependent on a syphilitic taint, they have been employed by others. As general remedies they have "unquestionably, in several instances, given great relief, and in a few, effected an entire cure; but still they have been far from being even generally successful."* In cases symptomatic of syphilis, a perseverance in their use may be expected to effect a removal of the complaint.

II. Anti-rheumatics.—The manifest resemblance observed to subsist between certain chronic forms of rheumatism and many cases of this painful affection, led to an early use of remedies in the latter disease, which had been found successful in the former.

Arsenic.—Among the remedies of this class, this powerful article of the materia medica has been frequently employed, and with various reports of its success. In one instance its exhibition proved injurious, in others unavailing, but in several cases it has been prescribed with great and permanent benefit. The hurtful effects of arsenic on the constitution, when its use is long continued, which is required in this disorder, is a great objection to its employment.

Calomel and Opium.—Mercury, in several of its forms, has occasionally proved successful, especially when carried to the point of salivation; but the preparation of the sub-muriate with opium has been attended with much the most beneficial effect.

Guaiacum.—Dr. Hosack,† observing the analogy between rheumatism and neuralgia, thought that benefit might be obtained by the use of the volatile tincture of guaiac; which, in a case he mentions, in the dose of a tea-spoonful every two hours, produced relief whenever the patient had irritation in the affected part.

Turpentine has effected a speedy and complete cure in

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* Medico-Chirurgical Review.
† See Appendix to Thomas's Practice.
several individuals, where the disease was seated in the sciatic nerve; in others, though relief was experienced, a relapse took place. It was administered in the dose of a dram.

Vinum Colchici.—Mr. Tyrrel* relates a case where this was the only medicine from which the patient derived much relief, and where all the most popular remedies had been taken. The salutary operation of this article on rheumatism, gout, and other painful affections of the asthenic kind, seems to designate it as an appropriate remedy in neuralgia.

III. Narcotics.—Pain seated in the nerves being the characteristic feature of neuralgia, and the prominent effect of anodynes, consisting in the production of torpor of the nervous system, the whole class has been naturally resorted to for relief. Its success has not been commensurate with the expectation excited by its character, and in consequence it is declining in reputation; yet there is reason to believe, that in many instances, it will be found the most effectual class of remedies. A case which came within the writer's observation, in which the administration of tonics, including the carbonate of iron, was attended with no advantage, but which was permanently cured by the use of anodynes, is an evidence in support of the opinion. The individuals of this class of medicines are not all equally active in subduing the complaint, even in the cases in which anodynes may be supposed serviceable—indeed the want of conformity in their operation, cannot be better illustrated than in their effects on this disease. Opium, the most powerful of the class, has been largely prescribed, and almost universally with little permanently beneficial influence, in some cases scarcely producing a transient relief;† while many others, whose general operation is far inferior, have cured the complaint. It would

* This case was not supposed to originate in rheumatism. See Note to Sir Astley Cooper's Lectures, Vol. II. p. 305.
† Medico-Chirurgical Review.
seem, that those individuals of the class have been found the most sanative, which have the least effect in constipating the bowels, or in otherwise deranging the digestive functions.

The employment of narcotics cannot be limited to any particular state of the constitution. In all they will be required and found valuable auxiliaries. They may be considered as primarily indicated in the variety of the disease, accompanied with spasmodic action: and where it is found connected with a vitiated state of the body, which is independent of a specific disease, as rheumatism, syphilis, or a derangement of the chylopoietic viscera.

*Conium maculatum.*—The eminently sedative operation of cicuta, would readily suggest it as among the most effective means of allaying the morbid irritability of neuralgia. With this view it was early employed. Dr. Fothergill found it a successful remedy; and it was the medicine principally relied on by Dr. Jackson, of Boston, in the treatment of this complaint. Dr. Willoughby, the distinguished professor of obstetrics in the university of the state of New-York, informs me he has given it in several cases with great benefit. Much more evidence, and some of it quite recent, could be adduced to prove the service of cicuta in neuralgia. It must not, however, be concealed that it has often failed; enormous quantities of the extract, obtained from respectable druggists, have been taken in a short space of time, without procuring even momentary relief. This failure was attributed by Dr. Jackson, to the employment of an inferior quality of the preparation, or the want of precise rules in its administration. “Experience,” he says, “proves that unless cicuta be given so as to produce a sensible effect on the system, it seldom exerts its influence over the local affection, but on that being attained, a subsidence of the pain is the immediate consequence.” A more probable cause of its frequent failure is its too general use. From the evidence on the subject, it appears that no one of the class of narcotics is more deserving of our confidence than a good preparation of the cicuta. Its use should be commenced in the dose of a grain of the inspissated juice, repeated every two hours, with the addition of a
grain till it amounts to five, or till dizziness or nausea evince its effects on the system.

Ammonia was successfully employed by Dr. Fothergill in the treatment of this complaint; and was also in the hands of Dr. Jackson, the means of effecting a cure in one instance. It was given in the dose of from one to three tea-spoonsful of the watery solution three times a day.

Belladonna.—This energetic narcotic was for some time considered the most certain and prompt remedy that could be employed; but either the danger of its operation on the system, or its failure in fulfilling the character given to it by its introducer, has thrown it into disuse. It was administered in doses to adults, of two or three grains of the extract, or from twenty to forty minims of the tincture, every four or five hours, during the severity of the paroxysms.

Stramonium.—The inspissated juice of stramonium is getting into considerable importance as a successful medicine in neuralgia. In some instances, particularly in young persons, it has effected a cure; and has often produced considerable respite where a variety of treatment has been resisted. Its dose is half a grain three or four times a day.

IV. Tonics.—It has been found that the state of the system preceding and accompanying this direful complaint consists, in a majority of cases, in a debilitated condition of the digestive organs. The frequency of this cause of the disease, and the salutary operation of tonics in removing it, by restoring these organs to a healthy tone, and correcting their depraved secretions, have often led to the abuse of this class of medicines; they have been employed indiscriminately, when so general a plan of treatment is as improper as it would be to give them in every stage of fever. It is not intended to inculcate that their use should be limited to the cases arising from a derangement of the digestive powers; in most protracted cases, especially after persevering endeavours have been made to remove the existing cause, they will be found the most successful remedies in effecting a complete destruction of the complaint.
The habit of body in neuralgia, indicating the employment of tonics, can be so readily conceived by every practitioner, that it is scarcely necessary to mention any of its symptoms; they are those attending a bad state of digestion generally, such as debility, defect of appetite, flatulency, &c.

Cinchona has been tried in a number of instances, and with various reports of its remedial powers. In some cases, related by Dr. Clark, it suspended the paroxysms for some months, but they eventually returned with greater violence than ever. Dr. Palmer exhibited it with much advantage, when the system had been worn down by protracted suffering, confinement, and a long course of mercury.* "It is under such circumstances," he thinks, "the cinchona is principally indicated." Mr. Swan appears to have used it as a general remedy with success. He speaks of it as the best tonic for strengthening the constitution, and thereby enabling it to counteract the habit which favours the continuation of the irritation."

Sulphate of quinine.—The active properties of the bark residing in this salt, and it having been found in England and France a successful substitute in the treatment of neuralgia, it is unquestionably a better form of the medicine for obtaining its tonic effects, and renders it unnecessary to dwell on the manner of administering the bark. The sulphate of quinine should be given in the quantity of a scruple every twenty-four hours.

Henbane and Zinc.—It ought not to be passed over that in Germany, Dr. Meiglin has employed the combination of a narcotic and tonic. He composed pills of the extract of henbane and sublimed oxide of zinc, and, according to his own statement, their exhibition was attended with great success.† The increased energy given to medicines by their combination, and the character of neuralgia, resting generally upon an irritability and debility of frame, seem to give this union the appearance of great usefulness, and make the

* Medico-Chirurgical Review.
† Good's Study of Medicine, Vol. III. p. 195.
consideration of similar compounds worthy the attention of the practitioner.

Carbonate of Iron.—No article of the materia medica has acquired so great a reputation for success in the treatment of this painful affection as the carbonate of iron. On its introduction to the profession by Mr. Hutchinson, it received a high character, which the relation of a great many cases, in the practice of English and French physicians, where it happily effected a cure, has been in Europe amply confirmed. In this country it has been found, in a number of instances, a very efficacious remedy; but here have arisen the first serious complaints against its remedial powers, for in several cases it is stated to have proved entirely inert. Previous to the publication of this discrepancy of opinion, it was considered as satisfactorily established, that the carbonate of iron, actively administered, was the remedy which had the greatest effect in conquering this obstinate and powerful disease. And it is now to be hoped, for the sake of suffering humanity, that its failure in the cases alluded to, is the consequence of misconceiving, or inattending to the state of the constitution in which it should be administered. In the use of the carbonate of iron it ought to be remembered, that the various other remedies calculated to invigorate the digestive powers, should also be employed.

It is administered in doses of from half a dram to a dram, three times a day; and when the system becomes accustomed to its use, the dose may be increased to two, three, or even four drams.

Diet and Exercise.—These may be regulated by the states of the constitution accompanying the complaint. In the young, robust, and plethoric, the diet should be antiphlogistic; where tonics are indicated they must be nutritious and generous, and wine or malt liquor should make a part of the patient's drink, or, in the absence of these, brandy and water may be substituted. The exercise should be in the open air; the mind should be diverted from business and care, and should be amused by a change of scene, agreeable prospects, and pleasant company.
Conclusion.—The preceding attempt to adapt the various remedies which have been found serviceable in neuralgia to the different exciting causes, is, I am aware, sufficiently vague: but an approximation to correctness will be found of value to the practitioner. That the successful treatment of the disease will depend upon administering remedies on this principle, must, upon a review of the nature of the disorder, be apparent. Thus, in the few cases which may be found to arise from a local cause, it cannot be doubted that the most rational mode of treatment will consist in topical applications; but where the disease originates in a constitutional disorder, it is obvious that its particular kind ought to be ascertained, and that such medicines should be exhibited as are adapted to the removal of this primary affection. If, however, constitutional remedies do not succeed in effecting a cure, local applications should be called in aid, and among these the counter-irritant of acupuncture should certainly be applied; and, if all these efforts at subduing this terrific disease should fail, which we have reason to think will rarely occur, as a dernier resort, resource must be had to the scalpel.

Art. II. Cases of Strangulated Crural Hernia. By John W. Sterling, M.D. Fellow of the Royal College of Surgeons, London.

On the 15th August, 1815, I was called to visit Mrs. C. P., a cheerful widow, aged 71 years. She had been occasionally subject to retention of urine, which appeared to be her sole complaint at the time of the present visit. Her pulse being regular, and bowels open, twenty drops of the muriated tincture of iron were prescribed, which had the effect of promoting the desired discharge. Since that period she has been now and then similarly affected, and always relieved by the same remedy.

Aug. 16th.—She complains of some uneasiness across the lower part of the abdomen, and is desirous of having a blis-
ter applied. Ordered accordingly. Has had a gentle evacuation from the bowels this morning.

17th.—Pain or uneasiness removed; bowels constipated. Habeat submur: hydrarg: gr: vj.

18th.—Bowels still constipated; pulse slightly accelerated, but not tense. H: ol: ricini 3ij.

19th. — 8 o'clock A. M. The oil has not operated; no distress at the stomach. Cathartic repeated.

12 o'clock M. Still no evacuation from the bowels; feels a sense of constriction and pain extending across the hypochondriac and epigastric regions; the pulse but little excited, no vomiting, but occasional eructations. I now suspected that there must be some obstruction in the bowels, and on examination discovered a tumour on the right side nearly as large as a hen's egg, and lying upon Poupart's ligament. Considering that this was a strangulated crural hernia, I resorted to the taxis, but in vain. Ice was directed to be kept constantly applied to the tumour.

4 o'clock P.M. — Repeated the taxis, but again unsuccessfully. Requested another opinion.

In the evening Dr. Valentine Mott attended in consultation, who attempted to reduce the hernia, but could not accomplish it. As there were no symptoms present indicative of immediate danger, gr: xv. of calomel were given, and poultices, or fomentations, alternated with ice, directed as external applications.

Aug. 20th.—9 o'clock A. M. Dr. Mott performed the operation for strangulated crural hernia. On cutting through the hernial sac the omentum presented itself, but there was no intestine visible, neither could any be discerned by pulling the omentum to one side or the other. Dr. M. then cautiously cut and tore through the omentum, until he came down to a small knuckle of dark-coloured intestine; so that there was a complete omental sac formed, in which the protruded intestine was completely enveloped.* The stricture being

* This may account for the comparative mildness of the symptoms attendant upon the strangulation, and for its long continuance without pro-
dilated by introducing the knife flatwise upon the extremity of the finger, and then turning its edge upwards, and incising towards the umbilicus, a small additional link of intestine was drawn down, which brought into view that portion of it which had corresponded to the crural ring: the protruded bowel was easily returned, but the omentum being crepitous, was allowed to remain in the wound. Immediately after the operation there was a copious evacuation from the bowels, which being repeated, cathartics were deemed unnecessary.

21st. Some tenderness of the abdomen with frequent and contracted pulse. Twelve ounces of blood were drawn from the arm, and a blister applied over the abdomen. On the following day all inflammatory symptoms were removed, and on the 21st September, the wound was entirely healed.

On the 23d June, 1828, I was again called to this old lady, now seventy-four years of age. She had been complaining for a few days of considerable pain in the bowels, for the purpose of removing which she had taken some hiera picra, (pulv. aloes c. canella) but without much benefit. On the evening previous to my visit she was seized with vomiting, which had not ceased when I called upon her. Bearing in mind her former difficulty, I particularly inquired respecting the tumour in the groin, especially as it was very prominent whenever she was in the erect posture and the pad removed; but at present, being recumbent, it was not discernible. The eccoprotic mixture was ordered.

4 o'clock p.m. Has rejected the mixture. On further examination, I distinguished a small tumour on the left side, which was a crural hernia. I applied the taxis, which proving unsuccessful, ice was ordered as in the preceding case.

7 o'clock p.m. Repeated the taxis, but with no better success than at the first attempt. The pulse being frequent, strong, and sharp, I considered that no time should be lost, and therefore, requested another opinion. Dr. A. H. Stevens ducing mortification of the intestine, as the neck of the intestinal loop was shielded from the direct pressure of the ring by the omentum which completely surrounded it.
was called in consultation, who applied the taxis, but finding it ineffectual, decided that the operation should be performed immediately. The operation for crural hernia was, therefore, performed by Dr. Stevens, and the contents of the hernial sac were found to be omentum, and a small loop of dark-coloured intestine situated behind the former. The anterior portion of the omentum was cautiously divided, and the intestine detached from its adhesions with the finger; the stricture was then dilated upward and inward, and to such an extent as to allow the end of the fore-finger to enter the crural ring. The intestine being emptied, by gentle pressure was returned. A portion of the omentum was also returned into the cavity of the abdomen; another portion was pressed up as a plug into the crural canal,* and the remainder being closely adherent to the hernial sac, was left in the wound. The edges of the wound were then brought and kept together by means of adhesive straps, suture, and bandage.

H: enema statim. The injection not bringing away any feces, she was directed to take two ounces of the following infusion every hour, until it operated on the bowels.

R Sulphat. magnesiae - - ½j.  
Fol. sennae - - ½s.  
Aq. bullient. - - Oss.  
27th. 9 o'clock A. M. Has taken the whole infusion which has operated. Febrile symptoms being present, the following prescription was ordered:

R Nitrat. Potass. - - 3iv.  
Antimon. Tart. - - 1 gr.  
Misce et divide in pulv. No octo. One of these powders to be taken every two hours.

7 o'clock P. M. Some tenderness of the abdomen being present, ten ounces of blood were drawn from the arm, and a large blister applied over the abdomen.

* There has not been any descent of the hernia on the left side since the operation was performed, notwithstanding there has been no support given to the part subsequent to the cicatrization of the wound.
Strangulated Crural Hernia.

28th. 9 o'clock a.m. The alvine evacuations were very frequent throughout the whole of yesterday, but some inflammatory action persisting, the antimonial solution was ordered, and at 6 o'clock p.m. she was again bled to the extent of $\frac{3}{4}$xi. From this time she continued to improve daily, and on the 25th July the wound was cicatrisd.

On the 8th of August I called to see this old lady, and found her in good health and quite cheerful. She easily ascends and descends two pair of stairs daily; with the assistance of a cane, however, which she has been obliged to carry for some years, in consequence of a fracture of the right cervix femoris, which occurred the winter preceding the first operation for hernia. It may not be amiss to state that Mrs. P. bore the operations with the greatest fortitude, and it is principally on account of their successful result in a person so far advanced in life, that I have been induced to record them.

There was one circumstance, however, on which I would beg leave to offer a few remarks; I never have read of an instance wherein the omentum was protruded before the intestine, in such a manner as to form a complete pouch enveloping the latter on every side. Nevertheless this was the fact in the case first related, and I can readily conceive how it was effected. The patient was lame in consequence of a fracture of the neck of the right femur, which, together with age, obliged her to walk with a considerable inclination of the body forwards and to the right side, leaning on a staff. This position would naturally approximate the greater curvature of the stomach to the pelvis, and thereby tend to place the inferior part of the omentum directly over the internal opening of the crural canal; so that if a portion of bowel should be forced through this canal, it would either perforate the omentum, or carry an envelope of this membrane before it; consequently, if the latter should be the case, there would be an omental bag, embracing the intestine, within the proper hernial sac. Whether this be a proper explanation of the manner in which this bag is produced or not, is a matter of no great moment; but it is a matter of great importance to be aware that such a state of things may exist; otherwise, as
the omentum, in a similar case, would completely envelope
the intestine, the protrusion might be considered as an epiplo-
cele simply, and if treated accordingly, the most serious con-
sequences would follow; for it is evident, should the omen-
tum be returned, without liberating the intestinal protrusion
locked within it, that the strangulation would be liable to
continue, and death consequently ensue. The same event
would equally follow if the omentum should be allowed to
remain in the wound after its stricture had been divided, for
the omentum itself may gird the intestinal-loop which it en-
velopes. If any appearance of the protruded omentum can
afford an indication that a portion of intestine is contained
within it, I would say that it will appear smooth, tense, and
spherical. This was the appearance in the case under con-
sideration; but it should not be depended upon, especially as
the omentum contained within a hernial sac, may, so far as
regards itself, be cut into with impunity.

Art. III. A Case of Pseudo Syphilis. By James Fountain,
M.D. of Yorktown, Westchester County, New-York.

Although syphilis has probably existed in some manner
from the earliest ages, and has been generally known since
the discovery of America by Columbus, yet even at the pre-
sent day, its etiology, pathology, and treatment, are far from
being settled. Some contend that its cause is a specific
poison, sui generis, and always identical in essence, handed
down to posterity, and modified by peculiarities of constitution
and local circumstances; whilst others maintain that its
causes are various, arising at different times from filthy mor-
bid secretions, generating a multiplicity of venereal affections.
Nor are writers more unanimous in their pathology, shaping
their theory to that of its supposed causes. Some have at-
ttempted to prove that its varieties depend on the different
textures in which they are located, being in one a simple in-
flammation, capable of being overcome by the natural efforts
of the system, and in others influenced by different laws, pre-
senting different aspects and pursuing different courses. Hence the origin of the distinction of syphilis and pseudo-
syphilis. Neither are practitioners more uniform in their
mode of treatment than in their theories. Whilst one set round-
ly assert that mercury is necessary in every case to ensure
complete success, another as boldly affirm that it is never re-
quired. This diversity of opinion is easily accounted for
from the well known fact that syphilis, when it first broke
forth upon the world, was a highly formidable and dangerous
disease, assuming the character of the plague, and attended by
violent fever. Passing through so many constitutions, it has
at length become a truly protean disease; and nothing but a
perpetual and vigilant attention to its variations, can make a
practitioner a competent and adroit manager of this loath-
some enemy to domestic happiness. Hence the necessity of
faithful reports of all cases deviating from the ordinary mani-
festations of this disease. For this reason I presume to in-
troduce the following.

The subject of this communication was Mrs. B. aged sixty-
four, of an unblemished character and good constitution, having
suffered no sickness except the venereal, which she had legiti-
mately contracted six or seven times. Two nights prior
to my visit, she had had connexion with her husband for the
first time in five years. During this interval she had enjoyed
uninterrupted health, being fully determined to avoid the con-
sequences. Though such accounts may seem dubious, never-
theless, I have no doubt of her veracity. Immediately pre-
vious to this lapse of time, she had suffered a most obstinate
and protracted venereal affection, excited in the same manner
by the first indulgence after an abstinence from matrimonial
gratification three years. The invasion of her former disease
being so unusual, and the circumstances so unaccountable, I
suspected her narrative, for the husband seemed wholly free
from any symptom of foulness, and solemnly declared his
innocence and soundness for several years. But the two
attacks and characters of the affections being identical, and
the circumstances testified by both parties, separately exam-
ined, so exactly coincident, I could no longer withhold my belief.

November 11th, 1627. Immediately after coition Mrs. B. felt a severe pain in the loins and back, and a burning sensation within; slept none through the remainder of the night; on the following morning about 9 o'clock felt chilly, and an ague was the result; this lasted an hour, when it was succeeded by fever with thirst, headache, &c.; drank some warm teas, and took a dose of Epsom salts; at night much the same. 13th. I was called early in the morning and found her as stated; pulse 100, hard; tongue furred; thirst; dry skin; tenderness of the lower part of the abdomen, and a smarting and burning about the vulva, constituting, I thought, vaginitis.

V. S. Jxvi. Sulph. magnes. 3j. to be followed by a powder every two hours of nitrat. potass. 15 grs. tart. ant. 1 gr. with copious draughts of elm tea.

14th. Symptoms rather milder; repeat the salts and continue the powders; 15th, much the same; continue the plan; 16th, worse; small red papulae began to appear, and continued breaking forth daily, greatly alarming the patient. I had assured her that she had no syphilis, but this eruption appearing, just in the old way, as she observed, I could no longer quiet her fears. Now, said she, I must take the mercury, and the sooner the better. However, I prevailed on her to persist in the antiphlogistic and alternative plan already commenced. The course stated, with some little variation, was pursued. The symptoms abated, but they soon rose, attended with all the appearances of Dr. Carmichael's papular venereal disease, and on December 11th, I was induced to abandon the above means. I could no longer resist her solicitations for the strongest kind of mercury. Oxymurias hydrarg. 3j, brandy 1 pint, dissolve; of this she took a table spoonful three times a day. December 18th, symptoms much mitigated; continue the medicine. 25th. Every symptom vanished. Her gums all this time only slightly affected. No other medicine was taken except an occasional anodyne.

Her last attack, five years ago, as already observed, was
precisely the same as this; but having given her calomel, and used mercurial frictions freely, I mistook the papular eruption for erythema mercuriale, and laboured under this error for several weeks, until an aged practitioner was consulted, who advised the corrosive sublimate as prescribed, and it accomplished a cure after a faithful use of calomel and blue ointment had failed. This led to the attachment of my patient to the strongest kind of mercury. Having briefly detailed two identical occurrences in the same individual, I shall leave the reader to his own reflections and inferences.

Art. IV. Case of Rupture of the Uterus, in which Gastrotomy was performed. By Edward Delafield, M. D. Professor of Obstetrics in the University of the State of New-York.

Rupture of the uterus is an accident so generally fatal, that it is desirable that the profession should be made acquainted with every case of it in which an attempt has been made to apply a remedy. The one employed in this particular case, the operation of gastrotomy, has in several instances succeeded; but it is equally desirable that the unsuccessful instances should be put on record. With this view, the following case is published.

Mrs. Cannon, of Brooklyn, was taken in labour on Sunday August 26th, at about six o'clock in the evening. The pains soon became severe, and continued with increasing rapidity and force during the whole night and the following day. The os tincæ becoming completely dilated, and the membranes protruding in a large tense bag, the latter were ruptured, and the waters discharged on Monday afternoon. The pains became still more severe, and with very slight intervals until eleven o'clock on Monday night, when they suddenly ceased, and a slight hemorrhage occurred from the uterus. The patient immediately vomited a small quantity of dark greenish fluid, became excessively prostrated in strength, with difficulty of breathing and extreme anxiety, and the pulse became extremely rapid and feeble. Under these circumstances she
was bled by the attending physician, and, as was stated, with much relief.

At two o'clock on Tuesday afternoon, fifteen hours after the sudden cessation of the pains, I was called to this patient, and learned the foregoing history of her case. I was also informed, that upon an examination being made a few hours before I was summoned, the presenting part, which previously to the cessation of the pains had been readily perceived low down in the vagina, had disappeared, and was entirely out of the reach of the finger. The form of the abdomen had entirely changed also, and extreme tenderness on pressure was felt in every part of it.

From this history of the case, it was evident, that after an uncommonly severe labour of nearly thirty hours duration, the uterus was ruptured, and the child passed into the general cavity of the abdomen. Upon examining the patient, it was immediately demonstrated that this was the deplorable nature of her case. The hand placed upon the abdomen detected the outline and limbs of the foetus, distinctly through the parietes of the cavity; and the whole tumour was much higher up than the natural one, and of a different form. Upon introducing the hand into the vagina, it passed readily into the uterus. No foetus was discovered, and the cavity of the viscus was found to contain nothing but a coil of intestine, passing through a large rent in its left side.

The patient was, notwithstanding, in a more comfortable condition than could have been expected after so alarming an accident; and was stated to be decidedly improved in strength, and altogether better than immediately after its occurrence. She complained of no pain, except upon making pressure upon the abdomen; her pulse, although feeble and rapid, was less so than it had been.

It was, however, so evident that without removing the child from its present situation, the patient must quickly perish, that after explaining to her the nature of her case, I proposed the removal of the foetus by an incision into the cavity of the abdomen; and the operation was immediately assented to, both by herself and her husband.
There was but one other alternative than this operation which could be looked to for relief; and that was cut off by the length of time which had elapsed since the rupture occurred; viz. introducing the hand through the rent in the uterus, drawing the foetus through it, and delivering per vias naturales. Examination had proved this impossible; for the uterus, although it admitted the hand into its cavity, closely embraced it, and the fissure was contracted in such a manner as not to admit even a finger through it. To have forced the hand through it, under these circumstances, would probably only have hurried on the fatal result; and indeed the delivery could not probably have been thus accomplished at all. The operation of gastrotomy was therefore decided upon, and performed at six o'clock the same evening, in the presence of Drs. J. K. Rodgers, Cornell, M'Caffray, and M'Givney.

An incision seven inches long was made in the linea alba, terminating just above the pubis. Upon opening the peritoneum, a large quantity of bloody fluid rushed out; and when the opening was prolonged through the whole extent of the incision, the breech of the foetus immediately filled and pressed through it. It was delivered as it lay, by the breech; the head passing through the incision with some little difficulty, which was obviated by pressing the chin down upon the chest. The child was of large size, and weighed probably at least nine pounds. Immediately after the delivery of the foetus, the placenta, which had also escaped into the abdominal cavity, was removed. A portion of membrane was then observed lying in the intestines, which for an instant was supposed to be the omentum. On closer examination, however, it was found to pass under some portion of the small intestines, and to be a part of the membranes of the ovum. It was therefore removed. The surface of the uterus, which now lay entirely exposed, was then examined; and it was found that the intestine, which was previously felt within its cavity, must have been withdrawn from it while the foetus was passing from the abdomen; as the rent was distinctly felt free from any portion of intestine. All the intestines within view, together with the peritoneum lining the abdomen, were observed to be much inflamed.
The quantity of blood lost during the operation was extremely small, not exceeding half an ounce. The intestines did not protrude at all at the incision, as was anticipated; and by supporting its sides, there was no difficulty in retaining them entirely within the abdomen.

The operation being finished, the wound was closed with sutures and adhesive plaisters, and the patient removed to bed. She had borne the operation remarkably well, and although the pulse was somewhat more feeble, her strength was not perceptibly diminished. A slight tendency to vomiting was the only unpleasant symptom which showed itself.

She was left for the night under the care of Dr. M'Givney, and I saw her again at nine o'clock the next morning. She had slept well for some hours after the operation; but about five o'clock in the morning, after an attack of vomiting, she sank so rapidly as to become speechless and apparently dying. Wine was administered frequently in small quantities, and the patient revived. She continued improving until I saw her, when I found her apparently as well as immediately after the operation; but still complaining of occasional sickness and vomiting. After my visit, the vomiting again came on with increased violence, and continuing almost incessantly until ten o'clock, the patient expired.

Permission to examine the body could not be obtained.

This patient had previously borne a child, which had been delivered by the forceps. The cause of the difficulty could not be learned, as the labour occurred in Ireland, whence the patient had arrived within a few years.

Art. V. Report of Meteorological observations made in the City of New-York, from May 1st, 1827, to May 1st, 1828. By order of the Medical Society of the County of New-York.

By John Baxter, M.D. &c. Secretary of the Committee.

A regular journal has been kept by me since May 1st, 1827. And the following are the results of my observations.

May. The barometrical pressure varied very little during this month, for although on the first day of the month it was
as low as 29 inches \(\frac{2}{3}\)ths, it arose next day to 29.7 which to 29.9 was the most usual height, rising but one or two days to 30.2; the average height may be stated at 29.8.

The temperature of this month was very mild, no frost occurring; the lowest temperature being 38°; the highest towards the last, 85°; difference being 47°, and medium 61°.5. From 70 to 80° was most usual at noon. For half the month the winds were East, the other W. and N.W. It rained on eight days; 2 inches \(\frac{2}{3}\)ths of rain having fallen, the dampness generally but small.

In June, the changes in the barometrical pressure were still less than in May, the mercury standing from 29.6 to 30.25, averaging 29.9, difference being \(\frac{5}{100}\).

This was considered a cool month from the great moisture, although the thermometer was raised several times to 90 and 92°, and not falling below 45°; not quite two inches, however, of rain fell during the whole month. The winds mostly from the South. Rained on eleven days. Deaths this month 340.

July. The changes in the barometer were less than the preceding months; the lowest being 29.75, the highest 30.15, the difference \(\frac{1}{6}\), and the average 29.95.

The temperature was high, rising to 100°, and falling to 60°, difference being 40°, and averaging 80°.

It rained on 9 days, 3.74 inches.

The winds were mostly from W. and N.W.

The deaths were increased this month to 576.

August. The barometer ranged from 29.6 to 30.3, making a difference of \(\frac{7}{10}\)ths of an inch, and an average pressure of 29.95 inches. The first week of this month was warm, and the thermometer as high as 102° on one day, but afterwards it was cool, and as low as 51° at night; thus the greatest difference was 51°, and the average 76°. Beautiful coruscations appeared in the western horizon a little after 9 o'clock in the evening, forming an arch to the east, and passing over head disappeared by 11 o'clock. Much rain fell, viz. 7.74 inches on 7 days. The winds mostly S. and E. some N.W.
September. The range of the barometer has been the same as the last. The first two weeks cool and dry; thermometer as high as 92°, and as low as 48°; difference 44°, average heat 70°; at the middle of the month a storm gave 3.3 inches of rain. Winds mostly S. and E. Deaths 426. The Aurora Borealis was seen twice this month.

October. The barometrical range still greater this month, viz. 0.9 inches, from 29.35 to 30.25, averaging 29.8 inches. The temperature the first two weeks at a stand, falling afterwards from 82° to 35°; difference 47°; average 58°; weather cloudy and overcast; rained on 10 days 6.3 inches; very moist. Number of deaths 440.

November. The change in the barometrical pressure exceeded an inch this month, varying from 29.3 to 30.85, making the average height 29.825. The temperature also changed very rapidly, so that it became one of the coldest months in the season; the thermometer falling to 23° from 70°, making the difference of 47°, the average being 46°.5. The quantity of rain which fell was nearly equal to that in August, viz. 7.12 inches; the wind mostly W. and N.W. Number of deaths 392.

December. The barometer fell still lower this month, to 29.25, the highest being 30.35, difference 1.10 inch, average 29.95. The thermometer fell to 14° this month from 61°, making the same difference as last month 47°; the average 37°.5. The rain which fell measured 4.3 inches. There was a vast quantity of misty and foggy weather; winds mostly from the E. and S.E.

January. The barometrical change was as great this month as the two last; viz. 1.10 inches, although the fall was not so low as the last, being to 29.4 inches, averaging 29.95. The rain which fell measured 4.7 inches, the wind varying from all points of the compass. Deaths not ascertained. The temperature at the lowest this month being down to 9°; the highest was 59°; difference 50°; average 34°.

February. Barometrical change this month exceeded the four last months, making the difference 1.15 inches; viz. from 30.45 inches to 29.3, the average being 29.875. The
Baxter's Meteorological Observations.

Temperature was also low, the highest being 66° the lowest 18°, making the greatest difference this year, viz. 58°; the average 39°.5. There was also considerable foggy weather, and a slight flurry of snow; 3.18 inches of rain fell; there were many South and East winds.

March. The change in barometrical pressure was 0.9 inches, the highest being 30.4 inches, the lowest 29.5; the average 29.95; the difference in the temperature this month was 61°, the thermometer rising from 19°, at the beginning to 80°, towards the last, the average being 49°.5; 5.04 inches of rain fell during the month. The most prevalent winds were from the S. or E.

April. The changes of the barometer was but 0.7 inches; viz. from 30.2 inches to 29.5; average 29.85. The temperature, which was between 76° and 30°, varied 46°, and the average was 53°; the winds mostly from the East; 4.42 inches of rain fell.

These observations were usually made three times a day, and the object was, with regard to the thermometer, to obtain the highest and lowest range in twenty-four hours. The time of day which is the hottest, varies according to the season; in summer, especially in the greatest heat of summer, the thermometer does not begin to decline until after 3 o'clock; in winter it will frequently decline after 12, almost always by 1, certainly by 2 o'clock. The lowest range occurs between 12 at night, and 5 in the morning, usually about 4. For obtaining these points the self-regulating thermometer is the most useful, and altogether the best kind of instrument, were it not for its great liability to get out of order, which, however, a little experience may teach how to remedy. With some trouble; for instance, it having got out of order, I put it into my pocket and took it to the instrument maker's, when on looking at it to point out the difficulty I found it right, I put it into my pocket again and returned home, on my arrival I found it again deranged, when with some difficulty I repaired it myself.

The times for making the other observations have been as early as possible in the morning, at noon, and the last thing
at night. I have not noticed in this report the variations of the hygrometer, because with the imperfect instrument which came into my hands, and which I retained till very lately, I soon perceived that the observations could be but little depended upon; in fact it is an instrument of very little use for ascertaining the moisture, as the number of circumvolutions of the hand could not be marked; but by an additional wheel given to it by Mr. Pike, this defect is in a great measure now removed, and more accuracy produced.

Upon reviewing the Journal for the past year, it will be seen that the quantity of rain which fell for the past ten months, ending the 1st of May, was uncommonly large; the whole quantity for the year being 53.94 inches, which exceeds the yearly mean for many years of any of the places given by Mr. Dalton, except Kendal, England, which is exactly the same. That of London for twenty years, is stated to be 20.68 inches, and Liverpool 34.11 inches, and Manchester 2 inches more; thus for this year at least our climate is not exceeded by that of England in the quantity of rain. The months in which the most have fallen were August, November, and October, in proportion of 7.74 7.12 and 6.30. And although the temperature has been no ways less than usual by the thermometer, no epidemic of any kind prevailed.

The reason of this greater moisture and rain having prevailed this past year, is not exactly apparent or accounted for. That constitution of the atmosphere which prevails in relation to heat, moisture, and winds in any region, and which is called climate, is dependent on the latitude, the situation of the place more or less elevated above the level of the sea, and its position as interior or nearer the sea. Much has been said with respect to a change which our climate has been supposed to have undergone for a number of years past, especially in point of temperature, and perhaps with considerable truth. That we are subject to great extremes, as well as a variable climate, cannot be denied, and it has justly been remarked, that New-York had the summer of Rome, and the winter of Copenhagen.
We, however, know ourselves, as well as from what our fathers have told us, that our winters have mitigated very much, and the last winter was especially marked by the entire deficiency of snow, none having fallen to lie five hours, from November to April.

In accounting for the fall of rain, Dr. Hutton, of Edinburgh, maintained that "the quantity of vapour capable of entering into the air, increases in a greater ratio than the temperature;" from whence it is inferred, that whenever two volumes of air of different temperatures are mixed together, each being previously fully saturated with vapour, a precipitation of a portion of vapour must ensue, in consequence of the mean temperature not being able to support the mean quantity of vapour; and, as according to Dr. Ure, "in a free atmosphere, the upper regions are colder in consequence of the increased capacity for heat of the air, by the diminution of the density," we may easily account for the fall of rain; but the increased quantity of vapour that must rise to cause the greater fall of rain, must be ascribed to some other cause, and this can be no other than the mitigation or more equal temperature of our winters, and this change has been very satisfactorily accounted for by the increase of our population to the North and West, the removal of wood, and the cultivation of lands, by which less water is locked up and for a shorter time by the frosts of winter, and thus a greater quantity of vapour is free to fall in rain. If this chain of causation be correct, there is a greater probability of the effect increasing instead of diminishing, even to the establishment of rainy seasons to endure for some time.

But another circumstance must not be overlooked as having considerable influence on this subject, viz. electricity.—Mr. Luke Howard, a scientific meteorologist of Great Britain, and who was eminent for his classification of clouds, has considered this as one of the acting causes explanatory of the fall of rain, from the opposite states of electricity possessed by clouds formed in different points of the heavens, and brought into contact with each other, when by restoring an equilibrium, a consequent precipitation follows.
That this is, however, but a secondary agent, is confirmed by a comparison made between the present season, so far as it has passed, and the former. The summer of the last year, (1827), notwithstanding the great fall of rain, was remarkable for the few manifestations of electricity by thunder and lightning, and this season, with also a large quantity of rain, we have already had powerful discharges of the electric fluid, with much thunder and vivid lightning, and Mr. Howard considers the electric effect as applicable to continued rain as to occasional showers, from the supply being continued to the clouds in proportion to the consumption, by means of evaporation which returns it during rain. Thus, then, the supply of vapour, and the establishment of a mean temperature, may be considered as necessary to produce rain, modified occasionally by discharges of electric fluid, either silently or with noise.

But whether electricity may be considered as a necessary link in the production of rain, either attended with thunder and lightning or silently, may become another question in meteorological science. A satisfactory explanation of thunder never yet has been offered to the world. The facts are every day presented to our view, but whether to attribute them simply to the condensation of vapour, or to the combustion by means of the electric fluid of inflammable gases collected in the higher regions of the atmosphere, may admit of a doubt.

We have rain in winter without thunder, except in mild seasons, and in summer, when those phenomena most usually occur, those operations are going on which supply most abundantly the inflammable gases, and which are stopped in severe winters. In summer we frequently have rain without thunder, sometimes lightning unattended with thunder, but never thunder unaccompanied by lightning. All of which phenomena are better explained by the combustion of gases than otherwise, although the occurrence of one does not render the other altogether improbable.

*Note.*—Since writing the above I have seen, though how authentic I cannot pretend to say, published accounts, by
which it appears that there has been an increase of moisture in Europe also, as well as in America, as the rain which fell in Great Britain in December, was unusually great. At Wigton it amounted to 4 inches; at Edinburgh 2; at Gosport 5; and at Kendal, which, according to Mr. Dalton, averaged for twenty-five years 6.084 inches, it was 10.395. In Paris, which in 1819-20 had 131 rainy days, had last year 167 days of rain and snow.

Art. VI. An Essay on Milk-sickness.* By Lunsford Pitts Yandell, M.D. of Murfreesborough, Tennessee.

It has long been a favourite belief among medical philosophers that the pestiferous epidemics which, from time to time, have visited the earth, have afflicted the inferior order of animals as well as man; and that they have been preceded, accompanied, or succeeded, by extraordinary commotions in the planetary system. The atmosphere has been supposed to be loaded with the seeds of disease, which fixing themselves in domestic animals, in birds and in fishes, spread desolation and death over the whole face of animated nature. Credulity and superstition have doubtless had their share in creating this belief, and the influence has perhaps been exaggerated; but it is a fact that of the distempers mentioned by Homer, Thucydides, Lucretius, and Dr. Pym, a characteristic feature was, that "mules first and dogs they struck," and afterwards man himself. It is no objection to this opinion that while some species of animals languish and die, others appear to prosper and multiply as in an element peculiarly congenial. Rotation is known to be the order of nature. One race of animals perishes and vanishes away to furnish subsistence to a succeeding and different species.

* In the first volume of this Journal, we published some notices by Drs. L. C. Beck, A. Coleman, &c. of this singular disease, which prevails in some of our western states. The paper which we now present to our readers, furnishes additional details in relation to it, of a very interesting character. It is taken from the third number of the "Transylvania Journal of Medicine and the associate sciences," an able periodical, recently started at Lexington, Kentucky.—(Ed.)
The disease which it is our design to describe commences, not indeed, like the distemper of the poet, sent by the gods, upon "mules and dogs;" but its origin is always among herbivorous animals. Man is never affected except in the second instance, and then through some of the animals which minister to his comfort.

Milk-sickness is confined, so far as we are informed, to the United States, and has not yet found a place in any system of nosology. Its character is, in fact, but imperfectly understood, and the cause from which it springs is veiled in uncertainty. Additional facts are still wanting, greater amplitude of discussion is required, to place the subject on incontestible ground. Without a hope of being able finally to settle the question, it is a sufficient apology for our taking up the subject at this time, that wherever the disease prevails it is singularly fatal, and that we hope to furnish some facts not heretofore published.

Local in its character, this disease prevails only in particular districts of country,—in regions marked by some peculiarity of feature, and generally, we think, in the vicinage of mountains or elevated land. So far as our acquaintance extends, it is limited to the middle, southern, and western states. It is to be found on the Yadkin river, in North Carolina, and in different parts of Georgia and South Carolina. Some sections of Virginia and Kentucky present it as an annual complaint. The Sequache valley, one of the most salubrious and delightful spots in our state, is subject to it. It prevails in Franklin county, in the valleys of the Cumberland mountain, and among the Mill-stone knobs of Sumner and Smith counties. Our remarks will be confined to the disease as it presented in the latter place, this being the source from which we have derived our principal information, referring to other places only for illustration.

The Mill-stone knobs are the termination of the hills dividing Barren from Cumberland river, among which the different branches of Goose creek take their origin. They rise two or three hundred feet above the level of the Cumberland, with sandy, sterile summits, and stretching towards the south,
terminate within a few miles of the river, in a rich and beautiful country. Covered as these hills are with the profusion of grass and herbage peculiar to a fertile soil and southern sun, and from their abruptness, being sparsely populated, they are the resort of the cattle of the neighbourhood. Like most small streams in this climate, the branches of Goose creek run only in the winter and spring, and early part of summer, leaving during the hot season masses of stagnant water to the influence of the sun; and, as might be anticipated, the inhabitants are the subjects of bilious disorders. No part of our state suffers more seriously from these visitations. Annually, diarrhoea, cholera, dysentery, and fever, in all their grades and changes, are as regular in their appearance as the return of the seasons. Cases occur, upon these water-courses, which border closely upon the malignancy of yellow fever.

Milk-sickness prevails, for the most part, during the season of vegetation. The first years of our life were passed on Goose creek in the neighbourhood of the disease, and the cases which we remember to have observed, appeared during the summer. Dr. Sharpe remarks that it is most common during the months of March, April, May, September, October, and November.* Cases occasionally occur in winter, but they are rare. My father, the late Dr. Wilson Yandell, in a letter to me on the subject, remarks, "it is most prevalent, if my memory serves me, from the latter part of May till after the autuminal frosts, scarcely prevailing in winter. About the first of June, if I am not mistaken, it is worst, though very dreadful throughout the summer when cattle are permitted to run at large." Dr. Thompson, a physician of this county, of great practical skill and accuracy of observation, in a letter to me says, "the season of the year at which the disease is most prevalent, is the fall, after vegetation has been mostly killed; about the time of white frosts, and from that time till the cold of winter becomes constant. The next worst time is about the appearance of vegetation in spring; though cattle sometimes suffer if the winter is mild, after un-

usually warm spells, in December, January, and February. Writing from memory alone, unassisted by notes, there is a slight discrepancy between the accounts of the latter gentlemen as to the season during which it is most fatal. Accident might have thrown more cases in the way of one than the other at a particular season, or cases occurring at one time might have impressed them more than others at a different time, and thus there would be a disagreement; but both of them agree with Dr. Sharpe, that the disease belongs to the period of vegetation, and of the cases on record a majority occurred in summer. Of those mentioned by Dr. Sharpe the two first appeared in June, two in May, and one in April, one only existing in winter; a chronic case, which had endured through two or three seasons.* If it is less prevalent during mid-summer and the last of the hot season, it is because cattle at this time are confined to pastures.

The disease attacks alike the aged, the middle aged, and the young, and unlike most maladies, seems regardless of the partition wall which nature has erected between the different classes of animals. Cattle and sheep are continually its victims when not confined to their enclosures. Deer are often found dead among the hills where the poison is supposed to exist, and their flesh imparts disease to animals using it as nutriment. Often when pursued in the chase their strength fails, and they are taken in an unnaturally short time, owing to disease; and the experienced huntsman, under these circumstances, refuses to eat them. Wild turkeys inhabiting the Mill-stone knobs are frequently found unable to fly. Opossums, raccoons, foxes, wolves, and other wild animals of prey, are often found dead near the carcasses of cows and sheep. Buzzards and carrion crows die in immense numbers about the putrid bodies of cattle. "Nine of the cattle of Mr. Cathey," (as my father informed me) "having suddenly died of the poison, these animals were attracted in great numbers, and repairing to a branch hard by for drink, after their fatal repletion, died in such numbers that, a freshet shortly

* Med. Record. loc. cit.
afterwards occurring, they were floated down so as to make
dams across the stream." Hogs and dogs are its common
victims when the bodies of poisoned animals are not burnt,
or protected from them by an enclosure. A petition was
presented to the last legislature of this state praying the passage
of a law fining all persons who should be guilty of a neglect
to burn or secure the carcasses of animals under their eye,
supposed to have perished from the poison. Even poultry
have been known to suffer with the disease from feeding upon
poisoned animals dying within their reach; while calves, colts,
and lambs are its most frequent subjects, imbibing the malady
from the mother's milk.

The cause of Milk-sickness.

"Hic labor extremus"—here we enter upon contested
ground—and here, as in too many cases where medicine is
concerned, we are compelled to acknowledge that the nature,
and even name of the offending agent 'atra caligine merse.'
The opinions started on this subject are four:

1. That it is a mineral poison, imbibed with the drink;
2. That it is the same poison, suspended in exhalation by
the sun, during the day, and deposited upon herbage, with the
dew, at night;
3. That it is a species of bilious disorder—originating in a
cause common to it and autumnal fevers;
4. That it is a vegetable poison, taken in by cattle with
their food, and imparting its deleterious qualities to their milk
and flesh. The last is the opinion which we maintain.

To the first opinion we would object, that if a spring or
stream of such poisonous waters, existed any where in these
hills, it must long since have been discovered by some of the
many labourers who have resorted thither to procure mill-
stones; or by persons who, in the pursuit of pleasure or bu-
usiness, have wandered over every part of their summits. Run-
ing as such a stream would, some distance, and mingling its
waters with other streams, its deleterious qualities would be-
come widely diffused, and in a short time generally known.
Such is not the fact; no stream or fountain is suspected. And
virulent as many of the mineral poisons are, and rapidly as
they destroy life, we are not yet acquainted with one capable of imparting its qualities to the flesh and secretions of the animal poisoned to such a degree, as to render them detrimental to other animals using them as food. This objection applies with equal force to the second opinion; and, it may be continued, the symptoms are not precisely those which attend poisoning from any known mineral. Besides, if such an exhalation existed in this country,—as of arsenic, or any other poison—which, descending with the dews of the evening, was fixed on vegetables, man himself, from eating fruit, cabbages, &c., would become in some cases directly its victim;—a circumstance which, so far as we are informed, has never yet occurred. Cultivated pastures, in this case, would not eradicate it; a hedge or fence would not exclude it; but floating in the atmosphere, it would descend alike upon herbs surrounded by an enclosure, and those which grow in the unreclaimed woods. But it is a fact familiar to the old residents of Goose creek,—and marked because it leads to a salutary observance—that ground in which cattle contract the disease may be converted into safe pastures by sowing it in blue-grass, timothy, or clover.

The third opinion, which, of all the four, is least reconcileable to the majority of unprejudiced believers, which appears most paradoxical to those who have seen their cattle die of an anomalous disorder, and their families sicken and perish from the use of their milk or flesh, has found many ingenious and able advocates. Its fallacy will be made out by the facts adduced in support of the last opinion—that it is of vegetable origin.

The cattle of one family are permitted to frequent the woods; they return home at night, apparently in health, it may be; the members of the family partake of the milk, and are soon attacked with sickness at stomach, vomiting, and other symptoms of gastric derangement, and perhaps some individual of it perishes. The calf, meanwhile, is taken with trembling, violent thirst, and rigidity of the extremities, of which it dies. The cow, all the time, which imparted the disease may be, to all appearance in good health—an appear-
Yandell on Milk-sickness.

ance which severe exercise, or simply retaining her milk, shows to be delusive. In returning home some of the cattle have perhaps died at the first stream on their way after drinking copiously; whilst others, scarcely able to reach home, manifest unequivocal symptoms of disease, teaching the family to beware of their milk.

While this is going on in one family, another, living in the same neighbourhood, inhaling the same atmosphere, drinking the same water, and faring upon the same diet, but with the precaution of confining their cattle to cultivated pastures, remains healthy. This was a circumstance of every day occurrence in the early times of Goose-creek, when the inhabitants were more in the habit than at the present day, of permitting their milk-cows to wander abroad. It is a fact of perfect notoriety, that persons living in the neighbourhood where the poison prevails, may indulge in the use of milk, butter, and fresh meat, and yet remain free from disease, provided the cattle be enclosed in clover, or other grass pastures. But if they be suffered to run at will, or even if the pasture ground be enlarged by taking in more woodland, disease and death, often are the consequence. Upon again excluding the woodland, which contained the poison, and confining the cows to the soil set with grass, health may be, as in many such instances it has been, again restored. Dr. Thompson's letter to me furnishes a case directly in point. "Robert M'Neely, his wife, and four children died within a week, under circumstances which left no doubt on the minds of any, that their death was the result of using poisoned milk. He had lived a number of years at the same place, and enjoyed good health, except that he was subject to attacks of humoral asthma. Having escaped so long he became careless, and during a busy season of hay-gathering, his cattle got out, and were not attended to for several days. The first milk taken after their return from the woods produced all the mischief. The effect followed its use almost immediately. All the family died except the two youngest children—one an infant at the breast, and they were saved with difficulty."
Is it likely that any form of disease having its origin in malaria, would deprive the wild turkey of its wings, and the deer and fox of the use of their limbs? Homer's disease went not so far. And even if it were a febrile disease which proved so fatal to cattle, the use of their flesh would not be detrimental to carnivorous animals; as hundreds of well-authenticated cases attest the flesh of poisoned cattle to be. Calves which perished from sucking the milk of the cow have imparted disease to dogs and buzzards feeding upon their flesh.

In the early settlement of Goose-creek, when the face of the country was covered with cane and pea-vine, and there was, consequently, no scarcity of food for cattle, milk-sickness was comparatively unknown. As the country became populated and provisions grew scarce, the cows being forced to be less elective in their food, it increased to an alarming extent. But in modern times, since pastures have become more common, and the inhabitants are more in the habit of confining their stock, it is again become a rare disease. Such is not the progress of marsh miasmatic disorders in this country.

In the Sequachee valley, one of the most salubrious regions in the western country, where bilious fever is almost unknown, this disease prevails, and is contracted by cattle on the sides of the mountain. When our species become its subjects, it is from partaking of the milk or flesh of poisoned animals. This is always the case. In every instance it may be traced to the use of this class of articles. Sometimes there may be obscurity and doubt, but strict inquiry will always trace it to this origin. Mrs. Jones, of Sumner county, laboured under the complaint without knowing the source whence she derived it. Upon the suggestion of Dr. Sharpe,* the cow which afforded the family milk was suffered to go unmilked, and in a few days fell sick of the complaint and died. This is a peculiar feature of this poison, that retaining the milk in the udder causes the cow to suffer with the disease, while its regular abstraction, at short intervals, has frequently the effect of procuring her escape.

* Med. Record. loc. cit.
Drunkards are said to be less liable to milk-sickness than persons not given to intemperance. This is not a feature of bilious disorders. Nor are its symptoms the same as those attendant upon the latter complaints. The tongue is often smooth and dry, or -if coated at all, it is with a tough white mucus. No pain in the head, spine, or region of the liver attends it, and it runs its course much more rapidly than any bilious disease except cholera. It is not marked by the regular paroxysms incident to fever, but pursues a steady, uniform, unchecked course, either to dissolution or a favourable crisis.

Finally, experiments have been made, and facts are numerous, proving in the most direct manner, the conveyance of the disease from one animal to another by milk. Dr. Thompson furnishes me a strong case. "A farmer's cows, four in number, broke out of their enclosure, and were in the Millstone knobs about thirty-six hours. When driven home, some of the milk was drawn from them and set aside, that its appearance on standing might be observed; the calves were permitted to suck the rest; they were hungry, the udders of the cows full, and consequently their repletion was copious. One of the calves was taken sick while sucking and died in a few hours. All the others died in a day or two. Three of the cows died; one which was sucked by two calves, both of which died, recovered, after severe disease, in the course of which all her hair dropped off. The milk which was set by was given to several domestic animals, as cats and dogs—all of which died, if I am not mistaken; some I am confident did, and all were diseased."

It has been objected to this disease being of vegetable origin, that it prevails in winter when vegetation is destroyed; and that relapses are common in it, as well as in fevers; that some members of a family are diseased while others escape; and that communities fearing to eat milk and butter nevertheless send them to market, where they are used with impunity.

That it prevails rarely in winter we have already shown, and then it is in warm weather, when cattle may find many vegetables still verdant.
We know of no reason why relapses should not be incident to milk-sickness as well as to other inflammatory diseases. Gastritis and enteritis may be brought back when partially cured, by exposure, or imprudence in diet. It is one of the peculiar phenomena of our disease, that its subjects rarely perfectly recover, but remain, through life, feeble, incapable of severe exercise—trembling when fatigued, and subject to a recurrence of gastric derangement after exposure.

If some members of a family escape, while others suffer with the disease, it is because all are not alike exposed to the noxious cause.

Butter is doubtless often sent to market from the regions of country in which the disease prevails, but it is the product of cows which have been confined to safe pastures, and are without disease; for we will not believe that there exists in our country a community so dishonest as to send butter to their neighbours which they know to be poisonous. Cows generally manifest the disease so unequivocally, that there is little danger of using the milk, and if it is once used, and disease results, the cream is thrown away, and no butter is made from it. And as it respects unsound beef, the objection has no force; for it is a fact perfectly notorious, that animals labouring under the complaint, though it be in a latent condition, will not bear exercise. Horses apparently healthy while at rest in their pastures, become soon exhausted, manifest marks of disease, and often die, if put into harness, or under the saddle. Cattle feeding upon the knobs, in seeming health, have been frequently destroyed by the fatigue of walking home; and consequently, no diseased beef could be driven to a distant market.

What the cause of this truly anomalous malady is, in the present state of our knowledge, it is impossible to pronounce. We have tried to show that it is vegetable; and like the disease which it produces, in character it must be unique. Some writers have gone so far as to designate the vegetable; but upon what authority we do not know. We do not think that it has ever been discovered; nor is this strange, for it has ne-
never been sought after by any one possessing the requisite amount of botanical knowledge.

The symptoms of the disease in the lower order of animals are languor, great thirst, constipated bowels, universal tremors, tossing of the head from side to side, great rigidity of the muscular system; a peculiar odour of the milk, laborious respiration, the breath offensive to the bystander. In man they are analogous. After the use of milk, butter, or recently slaughtered meat, in a shorter or longer time, the individual is attracted with a distressing sense of burning in the epigastrium, followed in a few days, generally in a few hours, with vomiting. The sense of the burning is often compared by the sufferer to fire. Thirst insatiable. These symptoms are uniform, pathognomic, and continue throughout the complaint. The bowels are constipated; sometimes incorrigibly so, and when this is the case, the patient falls a victim to the disease on the third, fourth, or at farthest, the fifth day. The pulse at first natural, becomes in the sequel small, tense, vibratory, and often irregular. The epigastrium becomes tender to the touch. The skin is of irregular temperature—the body being hot, and the extremities cold. The patient is distressed with a sense of burning in the palms of the hands and soles of the feet. The tongue is clammy, and covered with a white tough mucus; or is dry, red, and shining. Great prostration attends from the beginning. No regular remissions or exacerbations—no delirium, no pain in the head or back. Drinking aggravates the nausea and other gastric symptoms. A symptom much relied on by those conversant with the disease, is an odour of the patient's breath, suæ generis, which they cannot describe.

The symptoms of the chronic form of the complaint are a slight burning in the stomach, continued and distressing; occasional vomiting; general debility; trembling upon slight exercise; difficulty of breathing after moderate exertion; rigidity of the whole system; costive bowels; giddiness of the head; countenance sallow; intellectual dulness. This form of the disease results from a small dose of the poison, or from an imperfect cure of the acute kind.
Treatment. Venesection is not so valuable a remedy as might be anticipated, from the character of the symptoms. This is possibly owing to its not being resorted to in the first stage of the disease, since patients rarely apply for medical aid until it has made considerable progress. Opportunely had recourse to, previous to the stage of collapse, which rapidly supervenes in this disease, and while the inflammatory symptoms are yet clearly marked, it is decidedly beneficial. The pulse here, as in inflammation of the stomach from other causes, must not constitute the criterion by which we are to judge of the necessity for bleeding. We must be governed more by the state of the disease, the strength of the patient, the obstinacy of the vomiting, the pain and burning in the stomach, and the tenderness of the epigastrium.

Cathartics are esteemed by the most experienced practitioners, the sheet-anchor in this disease. Calomel is to be preferred on account of its weight, as well as its active purgative qualities. It is to be given in six or eight grain doses once in four hours, and to be assisted by stimulating enemata, until free catharsis be produced. When so fortunate as to fulfil this indication, the patient may generally be considered out of danger. The bowels must be kept soluble by castor oil, or salts and senna, until complete health is restored.

Blisters to the epigastrium are never to be neglected when the bleeding and the calomel have not the effect of allaying the vomiting. Sinapisms are also a valuable remedy. When the circulation is well balanced, the extremities being warm, cold water applied to the hands and head often produces great relief, sometimes stopping the vomiting as if by a charm. We witnessed this effect lately in an ordinary case of gastritis. The patient derived the most sensible and immediate benefit from immersing his hands in water just from the spring.

It is frequently necessary to cover the abdomen with blisters. The calomel must be used with a liberal hand till the bowels are acted on; and if ptyalism supervene, it is to be considered an auspicious omen. It is necessary to prevent the patient from taking too much drink, which should consist
of cold coffee, or water off parched meal or toast-water. The preparations of opium possess no great efficacy in this complaint, aggravating in some instances, instead of allaying the nausea and vomiting. Mint-water has sometimes a good effect. Upon the whole, we would rely mainly on venesection, mercury, epispastics, and affusions of cold water upon the extremities.

The chronic form of the complaint is to be treated with calomel in minute doses, given to salivation, epispastics, castor oil, sulphur, and the alkalies. The latter class of remedies are of peculiar efficacy in this form of the disease.

The course indicated for the acute form, timeously adopted, and steadily persevered in, will generally terminate the disorder in from five to ten days; but it sometimes happens that a truce only is obtained; the patient is but partially cured, and after dragging out a miserable existence for a series of months, falls a prey at last, to the symptoms with which he was at first attacked.

Autopsical examinations have never been made on the human subject; but the symptoms of the disease in man and brutes being the same, we may infer that its ravages are likewise analogous. In post mortem examinations the stomach and first intestines of cows, have been found to bear the marks of inflammation in its various stages: they are often gangrenous and uniformly dry and hard, often as if exposed to the fire. Their contents are also dry, evidencing diminished secretion. No traces of disease have ever been observed in any other organ, except that the lungs are sometimes preternaturally engorged with blood.

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Art. VII. Case of Bronchocele successfully treated by Iodine.
By Thomas Cock, M.D. of New-York.

In the autumn of 1822, my attention was called to the consideration of a case of bronchocele, on account of the favourable reports by M. Coindet of Geneva, of its treatment with the preparations of iodine. These papers were put into
my hands by my friend Mr. John Griscom of this city, and some of the hydriodate of potash, then new, was also offered, provided I should wish to use it. The particulars connected with this case had almost escaped my recollection, until within a few days, when its interest was agreeably revived by a request to call and see the lady for whom I had prescribed, presenting a complete cure.

The disease was of eleven years standing when my attention was first directed to it. The left lobe of the gland was the most enlarged; it extended to the base of the lower jaw, and impeded mastication, deglutition, and occasionally respiration. The right lobe was one-third the size, and rather more dense than the left, which was uniformly soft, yielding to pressure, and having its density increased by its increasing size.

No doubt existing of its being a genuine goitre, I did not hesitate to recommend to the lady, in strong terms, to commence the use of the remedy mentioned. To her ready acquiescence and faithful perseverance in the use of the means proposed, much of the successful issue may be attributed. I first commenced with the external application of the hydriodate, in the form of an ointment, in the proportion of one drachm to the ounce. This was applied by friction, morning and evening, over the whole surface of the tumour, and was followed up for about two months, when the supply of the medicine failed. Shortly after some of the iodine was again procured, and a tincture prepared agreeably to Coindet's prescription, of which she took ten drops and increased to twelve three times a day. Such was the course of treatment pursued.

It may be remarked, that in two or three weeks from its commencement, the tumour had diminished in size one-eighth of an inch, as ascertained by actual measurement. From this period it continued to diminish gradually, and the use of the remedy was persevered in for about eighteen months, without any inconvenience.* The cure was completed, without leav-

* It was omitted for some few weeks, in consequence of an attack of remittent fever, for which her family physician prescribed, and was resumed again after her recovery.
ing a vestige of the disease, in three years and a half. It would seem that the impression made, had a uniform system of progression to its final termination. The patient's general health has been also improved, and she has less disposition to headache than formerly.

Since the above case, two others have come under treatment, both by the internal use of the iodine and the external application of the hydriodate in the form of ointment, and a favourable impression has been made on the tumours. Their further progress will be reported hereafter.

Remarks. My observations on the use of iodine are decidedly favourable. It has great effect by external application upon lymphatic tumours, and in amenorrhoea, I am disposed to think that it is a valuable remedy. In bursal enlargements I have also reason to consider that it will be efficacious.

The above considerations are submitted in full confidence that iodine is the great remedy in goitre. It makes a powerful impression upon the system, and for this reason must be used with great discretion.


For the substance of the following remarks on the Dengue or Dandy fever, as it manifested itself particularly in the Havana, I am indebted to two sources of information; the one, a pamphlet written by Dr. D. Jose Antonio Bernal Munos, which was kindly presented to me by Mr. Stoughton, Spanish consul of this city; the other, a short history of its symptoms and treatment from the pen of the distinguished D. Simon Vicente de Hevia of the Havana, which may be found in the Mercurio of the 26th June. From the perusal of these documents, I shall endeavour to give a short extract, which, without entering into the details of the subject, will at least exhibit the characteristic symptoms of the disease, and point out that method of treatment which has been found most successful by the generality of practitioners.
The first notice which I received of this disease, was from a medical correspondent in the island of St. Croix, who writes me on the 25th Nov. 1827, "I can hardly hold the pen in my hand, having just recovered from a severe attack of a new fever, that made its appearance lately in St. Thomas, and is now marching through St. Croix with gigantic strides. I have no power, at present, to describe the symptoms; suffice it to say, that they comprehend most of the severest symptoms of common fever, with all the racking pains of acute rheumatism in every joint. The fever luckily does not last more than two or three days at the utmost, or it would certainly prove fatal. The whole of West-end is like one large hospital, and the physicians being nearly all attacked, there is little help to be had."

From the Virgin islands it regularly progressed westward, visiting the different islands in its course, and reached the Havana in the early part of the month of March. The disease as it manifested itself in that city, observed two distinct periods. The first, characterised by high febrile excitement and acute pain; the second, distinguished by chronic ailments and by an absence of fever. The premonitory symptoms which mark an attack of the disease are, great weight in the head, pains in the legs, and in the loins, proceeding to the arms, accompanied by general prostration of strength and mental uneasiness; the pulse is frequent and contracted: as the disease gains force, the skin becomes hot and dry, the countenance and eyes inflamed, the pain in the head increases to an acute cephalalgia, the pulse develops itself and becomes full and frequent and even hard in the more robust, with the other accompanying symptoms of inflammatory fever, which are more or less marked, according to the idiosyncrasy of the patient, or his peculiar condition when attacked by the disease. In some, the tongue was white and moist: in others, dry and inflamed: while in others again, foul in its centre, and red on its margin. In the first mentioned class, the head was rather weighty than painful; the urine clear and without deposit: in the second, the pain in the head was acute, and the eyes resisted the impression of the light, the urine high co-
loured: in the third class, although the pain and weight of
the head was more supportable, it was however accompanied
by vertigo and fainting; the urine was not inflamed, but tur-
bid.

It is remarked by Dr. Hevia, that those who were labour-
ing under the effect of chronic diseases at the time they
were attacked by the Dengue, felt an increase of all the symp-
toms of the previous disease; but by way of compensation,
sometimes found themselves happily rid of their complaints
with the termination of the Dengue. It is a striking peculi-
arity of this fever, that there was little or no thirst during its
continuance; so much so, that the physicians were obliged to
force their patients to accept even of the most agreeable
draughts.

The symptoms which we have described continued to in-
crease in force, and reached their crises, within the first twen-
ty-four hours: a perspiration then ensued, and as it flowed,
the disease gradually diminished during the second twenty-
four hours, so that on the third day the patient was left with-
out fever, but still subject to those chronic ailments which
marked the commencement of its second period.

In the second period, there was an absence of fever; inap-
petency, vitiated taste, the mouth bitter, the head light and
subject to vertigo in the more debilitated; muscular prostra-
tion, pains in the joints, nervous contractions, swellings of
the extremities, infarction of the lymphatic glands of the
neck, axilla, and groin. Thus we see that the disease evi-
dently commences its attack on the nervous and muscular
systems; the sanguineous system then becomes sympathetically
affected, producing fever and its attending symptoms, and if
the disease does not terminate by abundant perspiration or a
copious flow of urine, the symptoms of the second period then
supervene. It is classed by Dr. Bernal Muños among the
mucous or lymphatic fevers of the ancients, or the Adeno-mi-
engeal fevers of the moderns.

As to its diagnosis, it is remarked by the same gentleman,
that the appearance which the Dengue first assumed, was so
similar to that of the yellow fever, that had he not been aware
of the fact, that those who laboured under it were natives or acclimated, he himself could not have distinguished the two diseases. Its prognosis is very favourable. Out of 2500 men who were treated for this disease in the military hospitals of the Havana, not one died. It has, however, in some cases left very distressing chronic complaints in the subjects of its attack, and which have persisted for many months.

Dr. Bernal Muños enters into the investigation of the causes of this disease with much sagacity and spirit, and in opposition to the skeptic who doubts when he wills, affirms that there are well ascertained facts in medicine, and that there are principles sufficiently well confirmed, both by observation and experiment, to supply the just and reasonable scrutiny of the candid investigator of truth. The days are now past when the physician, poor in knowledge as he was rich in conjecture, wandered beyond the rational limits of investigation to discover in the supposed acrimony, acidity, fermentation, or dissolution of the humours, the causes of those diseases which, thanks to the advancement of a more rational physiology, we are now enabled to trace to the effects of those agents with which we stand in immediate relation.

It is in a dry and heated atmosphere, in the exhalations and dust of the earth, mental agitation, active bodily exercise, continued for some time; in the impressions of cold, and in the freshness of the breezes which prevailed every night at that period, that he discovers the remote or occasional causes of the disease. Its proximate cause is a dry and rough skin, whose stricture, by suppressing the perspiration, propels the fluids to the cavities and central organs. And it may be remarked, that to the unequal and morbid play between the functions of the skin, and of the internal mucous membranes, may be attributed the greater proportion of the diseases of warm climates.

From the method of treatment may be derived a strong confirmation of the truth of these remarks; where it may be observed, that a greater proportion of the sick were cured by observing diet, using partial baths of the feet and arms, sinapisms, laxatives, glysters, and diluents, without the administration of
any medicine. Topical bleeding was seldom found necessary —
general bleeding never; on the contrary, its effects were always
prejudicial, if not fatal. The reader would perhaps be as-
tonished were I to assert, that with a treatment equally mild, a
great proportion of those labouring under the yellow fever
might be cured, and that with the exception of leeching, which
I found extremely beneficial in this disease, I was never in the
habit of using more active remedies than those here prescri-
bed for the first period of the Dengue, and that with success.

But what will they say, who have advocated the necessity
of general bleeding, the administration of repeated purgatives
and diaphoretics, the use of mercurials administered both in-
ternally as well as externally, with the view of producing pty-
alism, and such like stimulants? — they may perhaps smile;
but my assertion still remains good, and its truth has been
sufficiently confirmed within the last three years by the ample
experience of the most enlightened practitioners of the Ha-
vana. Under their hands the yellow fever has become a dis-
ease comparatively tractable, and no longer looked upon as
almost necessarily fatal. And be it said to the honour of the
founder of the physiological doctrine of medicine, that this
amelioration in the treatment of this disease, is in a great
measure to be attributed to the sounder and juster views of
the animal economy which this doctrine has inspired.

But to return to the Dengue: the treatment in the second
period of the disease, consists in oily and opiate frictions, ap-
plied to the painful parts, rendered more or less stimulant;
anodyne cataplasms, fomentations, and lotions of the same
class, and emollients; slight doses of magnesia when the tongue
was foul, or the mouth bitter; slight bitters when the tongue
was clean, and the patient without appetite; warm clothing;
general baths and emollients when the pains were acute and
the rigidity of the limbs considerable; alkaline and resolving
unctions when the pains were dull and the swellings of the
articulations ædematous; salt baths when the patient was de-
bilitated and his limbs swollen; slight diaphoretics and mild
sudorifics opportunely administered. Such were the remedies
which were prescribed in this period of the disease, according to the particular circumstances of the patient.

I cannot conclude this slight and partial account of the Dengue without paying a just and merited tribute of respect to the distinguished merit of the excellent professors of medicine whose writings have furnished the materials of these observations; nor can I too much admire the virtue and wisdom of the medical gentlemen of the Havana, who like good watchmen, faithful guardians of the public health, on the approach of this epidemic, assembled a council of their brethren to deliberate on the best means of obviating its ravages, and of divesting it of its terrors.

ART. IX. An Account of the origin of the Law, "to incorporate Medical Societies for the purpose of regulating the Practice of Physic and Surgery in this State;" passed 4th April, 1806.*

By John Stearns, M.D. of New-York.

The influence which Medical Societies have had upon the profession, and the general misapprehension of their origin, impart to this topic an interest which I trust will not be deemed inappropriate. This interest is enhanced by the consideration, that the time will soon elapse when those who were concerned in originating this law will have passed the confines of time, without having left a single record of the fact, by which the numerous errors which have obtained publicity in our scientific journals might be corrected, and justice rendered to whom it is due.

From these publications, I shall select the following paragraph from a biographical notice of Dr. Bruce, in the first

* With much pleasure we publish this, we believe, only authentic account of the origin of our Medical Societies. It deserves to be recorded as the commencement of a system which has done more than any thing else to elevate the character and general respectability of the medical profession of this State.—Ed.
volume of Silliman's Journal of Science—"Previous to the year 1805, the practice of physic in the state of New-York was regulated by no public authority, and of course, was not in the happiest condition to promote the respectability and usefulness of the profession. To remove as far as possible the existing circumstances, Dr. Bruce became an active agent, and in conjunction with Dr. Romayne and other medical gentlemen of New-York, succeeded in establishing the state and county medical societies, under the sanction of the legislature. This act may be considered among the first efforts made in this country to reduce medicine to a regular science, by investing the privileges of medical men in the body of the members of the profession."—The President of the New-York county medical society, in his inaugural address for 1824, also states, "that this is the parent society, from which the other institutions of a similar character throughout the state have emanated."

Without multiplying similar quotations to evince the error of public opinion, I take this occasion explicitly to state, that neither Dr. Bruce nor Dr. Romayne, nor this "medical society," nor any physician then resident in the city of New-York, had any knowledge of the preliminary measures which led to the formation of this law, or the most remote agency in procuring its passage through the legislature. These measures were commenced exclusively in the county of Saratoga, with a view to reclaim the profession from that degradation and contempt to which it had been reduced by ignorance, professional broils, and the grossest empiricism.

Those who witnessed the original and progressive settlement of the northern and western sections of this state since the year 1790, will recognise the mania that infatuated the emigrants from the east, and the ambitious projects formed by those who assumed the title of doctor. Many who had never read a volume in medicine, were suddenly introduced to an extensive practice and to a reputation of such imposing authority, as to control the opinions of their superiors in science, and to prescribe rules of practice for their government. Consultations were generally distinguished for gross contro-
versies at the bed-side of the patient, whose health and life were often immolated to the ignorance, prejudices, or discordant theories of the contending physicians. Their skill was generally graduated by their ability to magnify the cures they had made. Gratifying indeed would it be, at this enlightened period, to be able to bear testimony to the total extinction of this relic of quackery, and to the abolition of that still more ridiculous and growing imposture, that indignity of our profession, which by the sign of a common vender, converts the medical office, designed for the cure of all diseases, into a private infirmary for curing those only which belong to a particular organ. But so great has been the change in public opinion, that empirics now seldom boast of their intuitive knowledge, their magic incantations, or their initiation into the mysteries of Indian practice; but are compelled to assume the appearance of learning, and to affix to their names the fictitious appendage of M.D.—a proof that scientific physicians will always be patronized as the public mind becomes enlightened. The ignorance of the practitioners had so obscured the science of medicine at the period referred to, that reflecting physicians united in the necessity of adopting vigorous measures for a radical reform.

In 1796 a series of numbers were accordingly published in the newspapers of Saratoga, which directed the attention of the profession to the subject of instituting medical societies, and ultimately led to the formation of a society in that county, consisting of twenty-one physicians. But so discordant were its materials, and so incompetent to sustain the character of a scientific institution, that the year of its formation became the period of its dissolution. This want of success did not prevent the renewal of future efforts.

In November 1805, another meeting was held, at which committees were appointed, and a resolution passed to invite the co-operation of the physicians of the adjoining counties of Washington and Montgomery. The following is a copy of the printed circular issued on that occasion.
"Sir,—At a meeting of physicians of the county of Saratoga, convened this day at the court-house in Ballston, for the purpose of devising means to improve the practice of medicine, we were appointed a committee to impart the object and wishes of that meeting to our professional brethren in the counties of Washington and Montgomery. In that capacity, we beg leave to recommend to your earnest attention the necessity of adopting some vigorous measures for the suppression of empiricism, and the encouragement of regular practitioners. The evil calls loudly for the united efforts of all who sincerely wish to remove from that valuable science, the imputation of quackery; under which, from the ignorance of some of its professors, it not unjustly labours. The wish of the meeting is, to procure from the legislature of the state their sanction to a medical society; and we request your attendance at the court-house in Ballston, on the 16th of January 1806, at ten o'clock, A.M. either in person or by a committee of your county, for the purpose of adopting the best means for obtaining an act of incorporation.

"We remain, &c.

"Wm. Patrick,
John Stearns,
Grant Powell,
Committee of Correspondence."

Pursuant to the notice in this circular, a delegation from these counties attended the adjourned meeting at the same place, on the 16th of January 1806. A memorial to the legislature was then reported, adopted, and signed, and a committee of three, consisting of Dr. Asa Fitch of Washington, Dr. John Stearns of Saratoga, and Dr. Alexander Sheldon of Montgomery, were appointed to carry the same into effect.

The committee from Saratoga and Montgomery attended the ensuing session of the legislature, and fortunately for the cause of science, the latter gentleman, Dr. Alexander Sheldon, was elected speaker of the house. Although the meeting at Saratoga did not contemplate the extension of the law beyond the limits of these three counties, the committee assumed the
responsibility of making it general, and of extending its privileges to every county in the state.

Accompanied with this explanatory view of the subject, they presented the memorial to the house of assembly on the 25th of February 1806, who referred it to a committee, consisting of William Livingston and Isaac Sargeant of Washington, Gurdon Huntington of Otsego, John Ely of Green, and Joel Frost of West Chester. The majority of this committee being medical men, favourably received the proposed plan for a general law to extend the act of incorporation through the state, which they finally matured and reported to the house. The powerful opposition to this bill threatened its early and prompt rejection by a large majority. The speaker, the committee, and several other members gave it a very able and vigorous support. But notwithstanding all the exertions and political influence of its friends, the danger to which the tranquillity of the state would be exposed by the incorporation of forty distinct associations of physicians, was so magnified by the opposition, and the impression thereby made upon the house was so great, that but feeble hopes were entertained of its success.

At this critical juncture, when a decisive vote against the bill was every moment expected to be taken, the late honourable William W. Van Ness rose its most eloquent and powerful advocate. And perhaps the pre-eminent powers of his parliamentary eloquence were never exerted with better effect. He refuted the arguments of the opposition, portrayed the benefits to the profession and to the public in such glowing colours, and with so much energy and zeal, that the opposition became feeble, the friends to the bill increased, and from that moment the successful issue was rendered certain. To his memory do the profession owe a monument of marble, with their gratitude deeply engraven upon its tablet.

On the first Tuesday of July 1806, three months after the passage of the law, about twenty societies were organised pursuant to its provisions, and within two years scarcely a county in the state, of any considerable population, was without a duly organised medical society.
ART. I. A Compendious System of Midwifery, chiefly designed to facilitate the inquiries of those who may be pursuing this branch of study. Illustrated by occasional Cases, with many engravings. 3d edition, with additions and additional plates. By William P. Dewees, M.D. Adjunct Professor of Midwifery in the University of Pennsylvania; member of the American Philosophical Society, &c. 8vo. pp. 644. Philadelphia, 1828.

The popularity of this work is evinced by its arriving at a third edition in four years. In a former volume we mentioned its first appearance, and ventured to express that opinion of its merits, which has been sanctioned by the public. The present publication is improved in many respects, and we particularly notice it at this time, for the copious observations it contains on those points of medical jurisprudence which relate to Midwifery. The introduction of this subject in a broad and prominent manner in an elementary work, is thus defended by Professor Dewees:

"In treating of subjects which have a relation to medical jurisprudence, it may be thought by some, I have rather wandered from the strict path which my professed objects point out. But in this I do not agree. First, because I do not meddle with any subject of a medico-legal kind that has not an intimate, and perhaps an entire connexion, with midwifery. Second, because on the intimate knowledge of this branch, some of the most important testimony almost exclusively depends. Third, some of the most frequent, as well as interesting objects of medical jurisprudence, as infanticide, supposed pregnancy, supposed delivery, rape, &c. are dependent almost altogether upon the evidence of the accoucheur. Fifth, because there are points in each of the cases above mentioned, which can only be eluci-
dated by the experienced practitioner in midwifery. Sixthly, because there is much ignorance as well as discrepancy betrayed in the testimony of physicians who may practise, (and even extensively this branch) when called into a court of justice, from the want of knowledge of the subjects at which we have glanced, rather than professedly treated." p. 92.

Omitting an analysis of those chapters which were formerly noticed, we propose confining ourselves to such as particularly refer to the science in question.

Chap. VII. On the Development of the Foetus.—The summary given by Dr. Beck in his Elements of Medical Jurisprudence, as to the gradual increase of the foetus,—and its weight and length at the full time, is extracted by Dr. Dewees. He corroborates the opinion of Dr. Willoughby and others in this country, that the average weight of children born in the United States exceeds seven pounds.

The observations made in Great Britain would lead us to believe, that it is comparatively rare in that country, to meet with children weighing more than twelve pounds. Our author remarks,

"In this country, as far as our experience goes, it is not unfrequently met with, if comparisons by the eye do not greatly deceive us. I delivered one woman of three children (at three different births and males,) all of which appeared of the same size at birth; and from the very large size of the one I first delivered her of, I prevailed upon the parents to permit me to weigh it—it weighed, without clothing, fifteen pounds and a half—the two others were not weighed—but appeared to be of equal bulk. I have met with two ascertained cases of fifteen pounds, and several I believed to be of equal weight."

The variety that occurs both in length and weight, as well as other marks of development, is ascribed by our author, to a variety of contingencies in the progress of the foetus from the germinal to the fully expanded state. As a result from this, the laws of development may be imperfectly, or irregularly—too slowly or too rapidly performed. If the former—the foetus may be defective in some parts, or natural or excessive in other portions of its body. If the latter—that
is, too slowly or too rapidly, it will exhibit either marks of immaturity or excessive though perfect size of all its members. The application of this distinction, in medico-legal cases, is deemed by our author of great importance.

"It is of great consequence sometimes to decide, between immaturity of development and the imperfection of development of the fetus; the first has relation to the time it may have tarried in the uterus, while the second is dependent upon the manner in which development has proceeded or been performed." Page 91.

Difficulties may also arise in cases where the developement is performed too rapidly or excessively.

The following cases are given as illustrative of the above distinctions.

"In November 1810, I was called to attend a female in labour with her first child. The woman had been very suddenly attacked with severe pains, in consequence as was supposed of great agitation of mind. On examination, I found the uterus was not completely developed; as a portion of the neck was still to be felt. I inquired of the patient, whether she thought herself at her full period; she answered, no: she was but seven months gone. After several hours severe suffering, she was delivered of a large boy; at least large for seven months. I however made no observations upon the case at the moment, as I was an entire stranger to the circumstances of my patient; though its size was remarked upon by an old woman, mother of the husband, who said, it was the finest seven months child she had ever seen. It is certain the child bore every mark of greater maturity than is usual with children born at the seventh month of uterine gestation.

"Some months after this period, I was called upon and examined before a magistrate and two lawyers, as a preliminary step to a suit for divorce, which it was intended should be sued for by the husband of my patient, if certain opinions derived from me, were favourable to such an undertaking.

"The following circumstances were alleged on the part of the intended prosecution before the magistrate and two lawyers; 1st. That at the period of the birth of the child, but seven months had elapsed since the marriage of the parties. 2d. And at the time of the marriage, the husband had been from sea but two days, and this after an absence of some months. 3d. That at the end of seven months, the wife was delivered of a full grown child. It was therefore declared, that the wife was pregnant before marriage; and that not by her husband; a bill of divorce was therefore intended to be prayed for."
"On the part of the wife, it was proved she had sustained an irreproachable character; that she was an industrious domestic woman; not visited or known to associate with any man in particular; that she had during the whole time lived with the mother of her husband, and that she had had her menstrual period but a few days before her marriage, and that she had not had them since her marriage.

"My evidence went to say, that at the period of labour the neck of the uterus was developed more than was usual at the seventh month, but was not effaced; which gave rise on my part to the question as above stated, whether the patient thought herself at her full term, and which drew from her the answer, that "she was but seven months advanced in her pregnancy;" and that my opinion and belief was, that she was not in error as regarded her calculation; though the child was very considerably larger than is usual at the seventh month. That violent mental excitement was very frequently a cause of abortion and of premature delivery; and it had been proved, that this woman had experienced great mental anxiety, as well as felt great anger the day previous to her feeling any thing like the pains of labour; and that this mental agitation might have occasioned the premature delivery.

"That the development of the foetus is by no means regular; that it is notorious, that some women bear much larger children than others; that the average weight of a newly-born child is fixed in this country, at between seven and eight pounds; now it must be evident from an average being taken, that there must necessarily be many children whose weight must exceed the stipulated weight or average, and many others fall beneath it. And though it was my belief that the weight of the child in question, was nearly equal to the average proportion, but that this in itself did not by any means prove it had arrived at full time; as all such children whose respective weights may exceed the average, and particularly those who may weigh from twelve to fifteen pounds at birth, (a thing not very unusual) must necessarily have weighed more than the average at seven months; and consequently, the weight of the child cannot mark the period of gestation with so much precision as to render it free from all error.

"That the fact just stated, must strike every body as an irresistible truth; and consequently, that this might have happened in the case in question; or in other words, as it is indisputable that many children at birth exceed the average weight; it must follow, that the lesser weight must be attained before the greater; and that in cases of excessively large children, six or seven pounds would not be an extravagant weight for a child at seven months, that would weigh nearly double, if carried to the full period of utero-gestation; and that there could be no possible reason assigned, why this might not have happened in the case in question.

The husband was so entirely satisfied of this possibility, that he abandoned all farther intention of a prosecution." pp. 95, 96, 97.
On the other hand, it now and then occurs, that the increase of the foetus has not kept pace with the period of utero-gestation. The following instance, says Dr. D. fell under his own observation, and he adds, "there could have been no possible error in the calculation, if any reliance can be put upon human asseveration."

"Mrs. —— was taken in labour at the end of the seventh month of gestation, and was speedily delivered of a foetus of about five inches in length,—and which would probably have weighed three ounces. It breathed very imperfectly a few minutes, and then died. Upon my declaring to my patient, that she had made a great mistake in her calculation, as the child at farthest could not be more than five months, she said that it was impossible from circumstances that any error could exist, and that she was every way certain, it must be full seven months. Presuming what might be the circumstances alluded to, I inquired of the husband, whether my conjecture relative to them (namely, that no intercourse had taken place for that length of time) was correct; he assured me they were, as the health of his wife had so rapidly declined at that time, as to prevent any union from taking place.

"Again, we are intimately acquainted with a lady (whom we have delivered of nine children, at full term) who never has produced a child that would have weighed at birth, five pounds. Yet this lady enjoyed an uninterrupted state of health, made an excellent nurse, and at the end of a year, her children were as large and as healthy as children usually are at this period. This lady was subject to no disease during gestation—she was even exempt from both nausea and vomiting." Page 98.

The uncertainty which obviously follows from the opinions and cases of Dr. Dewees renders a closer examination of the subject necessary on the part of the medical-jurist. We apprehend that in contested cases, no special reliance is placed on the length and weight, although these of course require to be noticed. There are other data, founded on a surer basis, to guide and enlighten the inquirer. It may be useful to some of our readers briefly to notice these—at least such as are not yet included in the systematic works on Medical Jurisprudence. But before doing this, we may state additional results obtained in some foreign hospitals, concerning the length and weight of the foetus at the full time. We collect them from various journals and systematic works.
In the Lying-in-Hospital at Florence, 500 women were delivered during eight years (from 1816 to 1824). The births were 506 in number. The heaviest infant weighed sixteen pounds (the Tuscan weight of twelve ounces) four ounces. The smallest born at the full period, five pounds—the majority weighed about ten pounds. The greatest length was 20 inches, the least 15, and the average length from 17 to 18 inches.*

In the Obstetrical Institution of Paria, during the scholastic year of 1820–1, there were 48 births. The greatest length was 21 inches, 3 lines; the least 15 inches, 9 lines. The greatest weight was 12 pounds, and the least 7 pounds. During the year 1823–4, there were 68 births. The greatest weight was 14 pounds, six ounces; the least five pounds. The greatest length was 21 inches; the least 15½ inches.†

The results obtained by Chaussier in his extensive researches, and also those procured from the Hospital de la Maternité at Paris, show that the average weight of the foetus at the full time, is about 6½ pounds. The extremes vary from 3 pounds to 10½ pounds. The mean length deduced in a similar manner, is 18 inches; while the extremes vary from 13 to 23 inches.‡

‡ Lecieux. Considerations sur l'Infanticide, p. 9, 12. Dr. Dewees mentions that he once delivered a child which measured twenty-seven inches in length. We observe that our author (page 93) doubts the correctness of the length and weight given by Dr. Beck for a foetus at five months. He considers it excessive, and states that according to Dr. Hamilton's and his own frequent observation, "it measures not more than from six to seven inches, and weighs but a few ounces." We of course place full credence in the correctness of this statement—all we wish to show is, that the general average (for it must necessarily be only such) is conformable to the experience of European observers. We will only adduce two authorities in addition to those given in the work referred to. Orfila in his Lecons de Médecine Légale, (vol. i. p. 47) says, "A cinq mois la longueur du fœtus est de neuf à dix pouces; son poids d'environ une
Among the positive marks of maturity or immaturity, we should place the greatest reliance on the one pointed out by Chaussier. If in a well proportioned adult (he observes) a line be drawn from the top of the head to the heel, its centre corresponds with the upper edge of the pubis. But in the foetus, this point is situated much higher; for in a ripe child, it corresponds with the umbilicus, or a little above it—at the end of the eighth month, it is two or three centimetres higher (about an inch)—at the end of the seventh month, it is still nearer the sternum, and at the end of the sixth month, it falls just on the edge of the bone.

To this, the proportionate length of the various parts of the child—the state of the skin and its appendages—the presence or absence of the membrana pupillaris, although doubts have been thrown on this last as a proof of immaturity by the late observations of Dr. Jacob, and the proportions between the spine and the skeleton, as observed by M. Beclard must be added.

All these, it will be seen, may be investigated on the living foetus. If death however should have occurred, additional examinations may be made. The earlier periods of conception have been minutely investigated by Dr. Pockels of Brunswick, in his "Contributions to the history of the development of the human embryo in the first three weeks after conception."* The Wennels have noticed the increase of the brain and the proportion, at various periods, between

* A notice of this work may be found in the Medico-Chirurgical Review, vol. viii. p. 575.
the cerebrum and cerebellum. While Tiedemann and Serres have particularly examined the development of the various portions of the brain. Lastly, the researches of Beclard as to the progress of ossification in the vertebrae, complete the catalogue of anatomical proofs, to which reference may be had for the solution of doubts. That they are infallible, need not be urged. They are results deduced from numerous investigations. Their validity remains unimpeached, until overturned by an equal number of opposing facts.

Chap. X. Of the term of Utero Gestation.—On this, Dr. Dewees professes a change of opinion: "We were at one period opposed to the doctrine of protracted gestation, for we had adopted that of the immutable nature of this operation, as regarded duration. But the case already referred to, convinced us that the period of nine calendar months could certainly be exceeded by thirteen days. This led us to a more careful investigation of the subject, and this has resulted in the entire belief, that the commonly fixed period may be extended from thirteen days to six weeks, under the influence of certain cases or peculiarities of constitution." p. 138.

The case to which our author refers is the following. The husband of a lady, who was obliged to absent himself many months, in consequence of the embarrassment of his affairs, returned one night clandestinely; his visit being only known to his wife, her mother, and myself. The consequence of this visit was, the impregnation of his wife. The lady was at this time within a week of her menstrual period, and as this did not fail to take place, she was led to hope that she had not suffered by the visit of her husband. But her catamenia not appearing at the next period, gave rise to a fear she had not escaped, and the birth of a child, nine months and thirteen days from the night of this clandestine visit, proved her apprehension to be well grounded.

"I have had every evidence (he adds) this side of absolute proof, that gestation has been prolonged ten calendar months, as an habitual arrangement in at least four females, that is, each of these women went one month longer than the calculations made, from an allowance of ten or twelve days after the cessation of the last menstrual period, and from the quickening, which was fixed at four months."

"Besides, a case within a short period has occurred in this city, where the lady was not delivered for full ten months after the departure of her husband for Europe. Yet so well and so justly too did this lady stand in public estimation, that there did not attach the slightest suspicion of a sinister cause." p. 130.

Such are the proofs that have come under Dr. Dewees own notice, in favour of protracted gestation. The term of utero-gestation in the first case may have been 296 days—not 41 weeks, and of the four next, 43½ weeks.

It is not our intention to enter into a lengthened discussion on this much-contested subject. It will be observed, that the experience of our author coincides with that of Dr Samuel Merriman, as given in a former number (p. 304 of the present volume.) The latter, indeed, mentions cases where, in his opinion, gestation was protracted to the 309th day (44 weeks.) So also did Drs. Hopkins and Porrer, in their testimony on the Gardiner Peerage Case. We beg our readers to remark, that this is the extreme which practitioners in extensive practice in this country and Europe, state from their personal experience.*

Dr. Dewees candidly allows, that as there is no certain mark to detect the instant when conception takes place, so we cannot ascertain, with absolute precision, the exact quantity of time

* Dr. Merriman, however, mentions a case of 323 days from the day of catamenial intermission, but he does not rely on it as a satisfactory example. His third instance of suppressed menses in April 1823, and delivery in September 1824, will hardly be urged in this discussion. We must, in passing, remind our readers that all Dr. Merriman's calculations commence from the day succeeding the last catamenial discharge.
that the foetus remains in utero. The cessation of the menses and quickening—though the most common evidences to calculate from, are necessarily subject to variation. Conception may occur at any time during the interval, while quickening happens at various periods of gestation. He concludes with justice, that in most cases a latitude of two or three weeks must be permitted.

Had our author rested here, we might have contented ourselves with the above statement, and left his facts to have the consideration they undoubtedly deserve. But with somewhat of the ardour of a convert, he proceeds farther. After censuring Dr. Beck, for his levity and incredulity on this subject; he quotes several cases from his work, and in particular, refers to that of Bartholin. The facts are simply the following. A girl complained that she had been seduced by a rich young man. She was confined and strictly watched in a maison du force, by order of the magistrate, and at the end of sixteen months, she was delivered of a boy. This brief narrative is quoted from Fowler, and of it Dr. Dewees remarks, that it is "particularly in point, and well worthy of consideration." We too think it worthy of consideration; but as we have not been able to examine the original author—Bartholin—and above all, as we are not satisfied that the guard was incorruptible, we place it among the "medical facts," which Dr. Cullen once characterized.

Two quoted cases are dwelt upon at large by our author as confirming and illustrating the doctrine of protracted gestation to an indefinite limit. They deserve analysis.

A woman aged 27 years, greatly emaciated and weak, had all the symptoms of pregnancy, in October 1820. About the middle of the fifth month, she began to feel the motions of the child, and at the end of the ninth felt the precursory pains of labour. A surgeon who was called, found the pains weak, and the os uteri not much dilated, though sufficiently so to allow him to feel that the vertex presented. In consequence of the extreme weakness of the patient, she was treated with permanent and diffusible stimuli, and with so much ad-
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vantage, that at the end of six weeks, she had regained the appearance of health, and had returned to her ordinary occupations.

A few days after the coming on of the pains, the motions of the child became weaker and eventually ceased. The size of the abdomen diminished, and the child appeared turned to the left side. The menses appeared in the tenth month, and returned regularly afterwards. In December 1821, Mr. Penker was called in consultation and advised forcible delivery, which was not consented to. In October 1822, he found the os uteri above the symphysis pubis, inclined obliquely half an inch to the right side, with the fundus to the left. The posterior surface of the uterus had descended so low in the pelvis, as not to be more than an inch and a half from the orifice of the vagina, and was not thicker than a double sheet of paper. The back and feet of the child could be felt through the abdomen. Such was the state of the patient in March 1823, up to which time she refused to submit to any operation. The narrator of this case promises the sequel at some future period.

The other instance is quoted from the 14th volume of the New-England Journal. A female, aged 29 years, became pregnant about the 1st of April, 1822. She was much afflicted during gestation, with spasms of the stomach and vomiting. She quickened at about the fourth month. After this, her spasms were less severe, but pains in the hips, loins, and back supervened. About two weeks before the expected period of labour, she was attacked with its usual symptoms. These continued for ten hours and then subsided, and from that time no motion of the child was felt. On the first of March, 1823, she was attacked with phlegmasia dolens in one limb. The disease having left this, soon seized upon the other. During the first and second week of this attack, she had a discharge from the vagina, resembling the catamenia. At times this was foetid, the os uteri was closed, and no portion of the child could be felt. She gradually recovered, and the tumefaction of the abdomen somewhat subsided. In June, she had the catamenia—further subsidence of the abdomen.
About two weeks after the supposed death of the child, milk was secreted and continued in small quantities until October. She remained in her usual state until April, 1824, when she was attacked with pain, vomiting, cough, &c., which continued until her death on the 24th of May.

On opening the abdomen, the uterus was discovered to be much thickened, and presented the appearance of having been inflamed and to have suppurated. It adhered closely to all the surrounding parts and organs. Anteriorly it was united intimately with the peritoneum, and in this way with the abdominal parietes. An incision was made through the anterior face of the uterus, and a full grown foetus was discovered.

These cases are deemed by our author identical—and he considers the first as unquestionably a case of uterine gestation. They prove, he observes, that the uterus may remain quiescent for a long period after the termination of the ninth month. Allowing the correctness of these deductions, what is their amount? That the uterus may become diseased, and thus prevent the expulsion of the foetus. So too, cases have occurred of sickness and death of the mother at and subsequent to the full period, and the child remained unborn. But neither of these apply to the question before us—namely, the time at which in the state of the ordinary health of pregnant women, labour takes place. Certainly a state of disease, so marked as in the last case, proving high inflammation and suppuration to have been present, must have impaired the ordinary functions of the uterus. Can it be correct reasoning to apply the result of these instances to a process which is ordinarily performed under circumstances of general health?

Medical jurists are principally interested with reference to the subject of protracted gestation, in bringing it down to its smallest possible limits—provided any limits at all exist. We take it for granted that they do, and we had hoped that those given by its advocates on the Gardiner Peerage cause, were sufficient for explaining the most extraordinary cases that occur in the present age. Eleven Calendar Months will not, indeed, include the twelve months—the fourteen months, or
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the sixteen months' cases of the 15th, 16th, and 17th centuries in continental Europe, but they would have sufficed to make Henry Fenton Jadis the heir of the title and estates of the insulted and outraged Lord Gardiner.

Chap. XLII. Uncertainty of the Child's Death.—On this point Dr. Dewees is extremely brief, and appears to consider all the signs enumerated as very uncertain proofs of death. There are several cases in which it may be very necessary to understand them, and decide accordingly. To aid in promoting information, we give the view of Dr. Blundell, one of the most eminent lecturers on Midwifery in London. They are taken from one of his lectures as reported in No. 245 of the Lancet.

"When instruments become necessary, the perforator more especially, it is always desirable to know whether the foetus be or not alive, and we will therefore proceed to remark a little on the diagnostics by which this point is decided.

"You will sometimes find in labours, that the cuticle is coming away from the head in large flakes, an occurrence, however, by no means frequent, or if frequent, not, I think, often observed. Now, if you perceive the cuticle separating from the scalp in the same manner as it desquamates from dead bodies in the dissecting room, you may always suspect that the foetal vitality is extinct. Though the desquamation of the cuticle, however, is a strong presumptive argument in affirmation of the death of the foetus, it certainly is not demonstrative; for cases have been related, and, among the rest, one by Dr. Orme, in which the cuticle has separated in consequence of cutaneous disease, the children being alive notwithstanding; so rare, however, are these cases, that I should feel disposed in practice to look on them as of no account, were it not that human life is at stake. Again, when the child is dead, I find in general that this may, after a time, be ascertained by the dislocation of the bones of the cranium, and their complete detachment from each other, so that the cranial texture seems to be thoroughly broken up. In cases of this kind, you feel all the bones at liberty, and floating, as it were, in the mollified brain. Hunter used to compare the head in this condition to a bag of shells. Mere mobility of the bones without displacement, and solution of union, is no proof whatever of death. Children on this evidence declared to be still, have, to my knowledge, begun to cry lustily immediately on entering the world. I repeat it, therefore, to demonstrate death, the bones must be detached and afloat.
"By laborious and other labours, it sometimes happens, that the umbilical chord lies within reach of the fingers, descending along with the abdomen in the crural presentation, and in presentations of the vertex, occasionally hanging down with the head. Well, in these cases, when the chord descends, if its pulsations are distinguishable, we may certainly infer that the foetus is alive, for this pulsation arises from the beat of the heart; but if the chord be cold, and brown, and flaccid, and destitute of pulsation, you may then, I think, be satisfied that the foetal life is extinct. Remember at the same time, that where the chord comes down, a temporary suspension of the pulsation for a few minutes may arise from syncope, and that such temporary suspension is no certain proof of death; no certain proof of that complete extinction of vitality, which renders resuscitation by the tracheal pipe or warm bath hopeless. By the condition of the chord, death is demonstrated in those cases only in which this part is found to be soft, and cold, and brown, or for half an hour or an hour together, totally destitute of pulsation. These, then, are the three principal evidences on which I rely, in endeavouring to ascertain the decease of the foetus—a desquamation of the cuticle, a complete solution of the connexion between the cranial bones, and for 30 or 40 minutes together, a total cessation of pulsation in the umbilical chord; and of the three indications enumerated, to me it appears that the second will, in practice, be found of greatest value, I mean the total disruption of the osseous structure of the cranium.

"Of the death of the foetus, there are, too, other signs which must not be passed without notice, although on them but little reliance can be placed. By your patient, you may sometimes be told that the foetus must be dead; for, "I have not felt it for a day or two." Now, be it remembered always, that the child may not be felt for hours, or days, or even for weeks together, and yet, nevertheless, it may be vigorously alive when born; certainly, so far alive as to be recuscitated by the tracheal pipe or warm bath. Do not be deceived, therefore, into a notion that the foetus is dead, merely because it has not been felt spurning or cuffing the uterus. By some it might be supposed that the child is dead, in those cases in which you cannot feel the pulsation in the fontanel. This might be made a very pretty subject for obstetric disputation; but when you are become more experienced in practice, you will not, I think, feel inclined to give much attention to this sign. If a child be prone to hydrocephalic, or affections of the convulsive kind, the pulsations of the fontanels may sometimes after birth be felt more distinctly than the beat of the radial artery; but in health, even in vigorous children, the cerebral pulsation may not be clearly distinguished, and how can we then, in prudence, venture to infer the death of the foetus, merely because the pulsation is indistinguishable at a time when the head is lying at the brim of the pelvis. Again: a strong proof of death is taken from the issue of a fetid discharge from the uterus, and yet you ought not to consider this sign as decisive, for these discharges are now and then observed, when the child is alive. Nor is it a certain proof that the child is dead, when under the vertex presentation, you find the me-
conium is making its escape, the discharge being detected by the stain which it imparts to the fingers; for although this discharge, in many cases, arises from death and paralysis of the sphincter, yet in two vertical presentations, I have observed a discharge of the meconium, though the foetus was vigorously alive.

"If the scalp is emphysematous, or the abdomen be tympanitic, this is a very strong presumption that the child is dead; and peritoneal tympanitis easily discovered in crural presentations, is not very uncommon in its occurrence. So that it is not from the emphysema of the scalp, the discharge of the meconium, the fetid discharges from the uterus, the quiet of the fontanel, or the quiet of the child, but rather from the desquamation of the uterus, the cessation of the pulsation in the umbilical chord, and above all, from the total breaking up of the bony structure of the cranium, that the death of the foetus may be most certainly inferred."


At the present day, a laboured argument in favour of Medical Botany is quite unnecessary. Some of the most valued ornaments of our profession are enrolled among the number of its cultivators, and its members have very generally concurred in attesting its utility.

Such being the opinion of medical men, the only question that remains in noticing the work before us relates to the manner in which it is executed. To arrive at a correct answer to this, it will be necessary for us, briefly to notice some previous works on medical botany. By this means we shall be enabled to judge, with more correctness, how much credit is due to the author of the volume under more immediate consideration.

Works or treatises upon medical botany are of two kinds. In the one, the subject is treated of distinctly; the plants are minutely and scientifically described and figured, and their chemical properties and medicinal virtues detailed. In the other, the descriptions are unaccompanied with figures, and the medicinal plants are noticed in connexion with remedies derived from the animal and mineral kingdoms, and those which are
the produce of art. To the latter class belong all the materia medicas, dispensatories, pharmacologies, pharmacopeias, &c. To the former, herbals, medical botanies, and medical floras.

As it regards systems of materia medica, some original ones have been published in this country, and we have also reprints of the most esteemed foreign ones; one or two dispensatories have also been published, besides the Pharmacopeia of the United States.

Though most of these works contain notices of some of our medicinal plants, our present business is chiefly with those productions in which these are made the exclusive subjects of examination. Of such, the only ones deserving of attention, previous to the publication under review, are those of the two Dr. Bartons, and of Dr. Bigelow.

The first of these works in the order of time, is entitled, "Collections for an Essay towards a Materia Medica of the United States," by the elder Dr. Barton, which reached its third, and we believe its last edition, in 1810. This being the first attempt of the kind, if we except the "Materia Medica Americana potissimum Regni Vegetabilis" of Schoepf, which, though from an author of great learning, is tainted with old and exploded notions,—we could not reasonably have expected a very perfect work. It is rather an enumeration of native medicinal plants then known, than an accurate account of them. It is unaccompanied with figures, and is destitute even of scientific descriptions. The facts are arranged under nine heads, viz. Astringents—Tonics—Stimulants—Errhines—Sialagogues—Emetics—Cathartics—Diuretics and Anthelmintics.

In the notices of the plants belonging to the above classes, brief as they are, we find much valuable information, both original and derived from other sources, though the author has, in many instances, placed too much reliance upon the testimony of incompetent witnesses. The vague and incorrect notions of our Indians, are too often set down as standard authority in favour of the medicinal powers of plants, and
many articles are introduced upon still more questionable evidence.

It must be admitted, however, that this work with all its faults, has served some useful purposes. By its means, the attention of our medical men was first directed to the study of the nature and properties of indigenous plants: "in particular, in the hands of the student of medicine, it has been useful as a guide in conducting him through the extensive wilderness of our riches."

In the year 1817 appeared simultaneously, or nearly so, the "Vegetable Materia Medica of the United States," by Dr. W. P. C. Barton, and the "American Medical Botany," by Dr. Jacob Bigelow. These works are enriched with beautiful, and generally accurate figures of the plants described; they contain, also, detailed botanical descriptions, chemical investigations, and practical information concerning their medicinal powers. The mooted question, which deserves the preference, we shall not attempt to decide. Both of them are, in some respects, deserving of the highest praise; in others, open to objection.

In the first place then, the works are too costly to be of very general utility. Many medical students, and even many physicians, cannot afford to purchase them. This circumstance operates injuriously in another way. The first impression produced on looking over these volumes is, that they are rather intended as fine specimens of the arts, than as exhibitions of medical talent and learning—rather intended for the table of the drawing-room, than the library of the student. Those who advert to the force of such impressions, must be aware that they operate much to the injury of these works.

Again, so far as it respects the vegetable chemistry contained in them, these works are also defective. There is often a want of accuracy in the analytical details, and the methods pursued are not always the best even then known. Since their publication, however, great improvements have been made in vegetable analysis; the active principles of plants have, in many instances, been separated, and some of the most efficient remedial agents have thus been discovered. The
older methods of investigation have been proved to be extremely inaccurate, and new ones have been substituted. On these accounts the chemical analysis contained in these works can seldom be relied on, though their defects in this particular, are not chargeable in any great degree to the authors.

We shall not occupy time in pointing out the peculiar merits of these works. Their publication, at that time, was a hazardous experiment, which, whether profitable or not to the proprietors, was most certainly in the highest degree creditable to the country, and to their authors. But persuaded as we have ever been of the importance of medical botany, we had hoped to have seen them succeeded by publications equally comprehensive, but far less costly;—such as would have found their way into all ranks and classes of the profession.

After the lapse of eleven years, we are presented from another quarter, with a work which, in many respects, answers these intentions. The author, though not a native, has resided in this country for many years, and is well known as a most active and successful cultivator of the natural sciences, particularly of the departments of zoology and botany. "His qualifications for the task," as he himself states, "result from fifteen years of botanical and medical observations and researches, and eight thousand miles of botanical travels, wherein he diligently inquired and elicited from the learned and the illiterate, the result of their practical experience."

Introduction, page 8.

According to Mr. Rafinesque, it has been ascertained, that there are nearly six hundred medical plants actually known and used as such, in the United States; many of which, however, are merely medical equivalents. This number being too great for the purposes of a manual, one hundred and five of the most active and efficient medical Types have been selected, figured, and described. The others have been referred to these as substitutes or suceedanea, when they possess nearly the same ostensible qualities and properties.

The species selected include all those of Bigelow and Barton, and twenty-five additional ones. Most of the figures
were drawn by the author, and a few reduced from the above works; they have been engraved and printed in a style suited to the assumed purpose. The botanical alphabetic order has been adopted, as the most convenient.

At the head of each article the proper botanical name is given; the English, French, and German names follow; next the officinal names used in the pharmacopoeias; and lastly, the vulgar or common names of the country, which are variable in almost every section or state. When a plant has received several botanical names, the obsolete are given as synonyms.

After the names follow the botanical and medical authorities consulted, the generic and specific characters, the complete botanical descriptions, the locality or native places of growth, with the general history of the genus and species, forming the botanical sections of each article.

The medical division contains the sensible and chemical qualities of the plant, with the medical properties, including uses, doses, and preparations. Equivalent substances, and various remarks, conclude the article.

The plan of adding medical substitutes is borrowed from the excellent French work of Peyrilhe on Medical Natural History. The knowledge of these medical equivalents, will be found very useful, when the required plants are not obtainable, while some substitute may perhaps be procured. It follows of course, that each equivalent is vice versa a mutual substitute in most cases, although the plants are seldom identical in power and activity.

Such is a brief outline of the scope of this work, drawn chiefly from the Introduction prefixed to it, which in general, has been well filled up by the author. The general principles of medical botany—a critical table of the principal authors and works consulted, and an explanation of some botanical terms precede the notice of particular plants. The plants are treated of in the alphabetical order, and each species is neatly, and in the main, accurately figured, though from engravings on wood.

In the notices of these plants the author has brought together, in a concise manner, what is known concerning their
medicinal powers, and has given copious references to authors who have treated of them more in detail. It should be remarked, however, that he is frequently mistaken as to their precise medical powers, and what he denominates his substitutes, are in some instances, misapplied. These occasional mistakes may be all referred to the fact, that the author is not a practitioner of medicine, and has, of course, been obliged to depend upon hearsay evidence rather than upon personal observation.

As it is, however, the work is valuable to the medical student, and the practitioner will not unfrequently find in it hints which may lead him to valuable discoveries in the vegetable materia medica. With these views, we feel greatly indebted to Mr. Rafinesque for the present volume, and we trust the continuation of it will not be delayed for want of patronage.

Art. III. American Medical Biography: or, Memoirs of eminent Physicians who have flourished in America. To which is prefixed a succinct History of Medical Science in the United States, from the first settlement of the country. By James Thacher, M.D. Fellow of the American Academy of Arts and Sciences, &c. 2 vols. 8vo. Boston, 1828.

We only reiterate a common remark, in asserting the interest attached to the biography of illustrious individuals. If executed in a becoming manner—with a proper attention to the traits that characterise, and the virtues that ennoble, it becomes an inexhaustible source of instruction. "The good that men do," lives after them, and is perpetuated from generation to generation.

Our own profession has not been wanting in such models. It would, indeed, be remarkable if this were not the case. There is no occupation which more constantly calls into exercise the benevolent and kindly feelings of the human heart—there is none in which they more require to be cultivated. The intellect, too, must be improved in all its wide extent of powers. Occasions have occurred, when as much firmness was needed as ever accompanied a general to an assault—and
it has often triumphed as gloriously as with the military victor. Much as we may be disposed, in our hours of despondency, to lament the imperfections of our science, it certainly will bear a favourable investigation on the score of facts observed, of theories arranged with wonderful ingenuity, and of noble discoveries, elicited at the expense of health, and even life itself.

With such feelings towards our profession, and believing that we should be recreants, did we not entertain and foster them, we have ever felt pleasure at witnessing any efforts towards illustrating the character of its distinguished votaries. It is probably no great stretch of national vanity to assert, that of all the learned professions, none in this country approaches nearer to the condition they hold in Europe, than the medical. Many of the most eminent American physicians have been educated abroad, and obtained there all the knowledge that the most celebrated schools could afford. They returned to improve it—to apply it practically to the diseases of their native soil; and as a result from this combination of intellect and experience, they too have been enabled to aid in enlarging the boundaries of science. In several instances, they have formed medical institutions, and thus gave the first impulse to that general diffusion of knowledge which at present exists among medical men.

We forbear, for obvious reasons, to indicate the more occasional causes that have led to reputation and success. They are sometimes to be found in the individual himself—sometimes events have exercised a benignant sway—while most commonly, a combination of both have led to the prosperous result.

A person who devotes himself to the elucidation of the characters of such men as we have adverted to, deserves well of the community; and particularly so in our own country. Our history is written in official documents and in newspapers, and we have few of those contemporary annals, which, in other countries, serve either as a guide or an admonisher to future writers.
At an advanced age, Dr. Thacher has undertaken the task of collecting the biographies of distinguished American physicians. We confess we were among the number of those who expected much from this work—we frankly avow our disappointment. We had hoped that it might be an altar on which all might heap their offerings, without any thing to divert their homage, or exacerbate their feelings. We had understood, nay, we had been informed, that the events of the present day in medical politics, were to remain unnoticed. Dr. Thacher has, however, seen fit in several places to take the stand of a partisan—to deliver decisive and sweeping opinions on subjects at least admitting of discussion, and to judge concerning them in a manner certainly not according with the views of many of those, who, before this, have felt for him nothing but respect and esteem.

The radical fault of Dr. Thacher's work, in our opinion, is, the want of a single author. Facts might have been obtained, and sketches of characters solicited—indeed, every aid that so voluminous a work, comprising so many details evidently needed—and still the modelling might have been the work of one hand. If this course had been pursued, it would have produced a unity of sentiment and style throughout the work, in which, at present, it is totally deficient. Illustrations of this defect are to be met with from one end of the work to the other. In the lives of some of the more prominent characters, it is however most observable, and of course, most to be regretted. The life of Dr. Rush for instance, though containing some good materials drawn from the eulogy of the late Dr. Ramsay's, is, taken as a whole, a miserable piece of patch-work, altogether unworthy of the subject. In this country, no finer field could be offered for the medical biographer than the life of this distinguished man. But to be his biographer and to do justice to the subject, requires sense, discrimination, and independence. It is much to be regretted that Dr. Thacher did not employ some man of this stamp to execute this part of his work, instead of trusting to the clumsy daubings of one whose ideas of biography do not
soar beyond the chronicling of dates, and the recording of births and deaths.

Another consequence of this mode of getting up this work, is the disproportionate length of many of the lives. The account of Dr. Bard, for instance, occupies forty pages, and that of Dr. Williamson covers nearly thirty—while that of Dr. Edward Miller takes up only seven, and that of Dr. Barton is compressed into two.

We would in the second place suggest, that the biographies are in too many instances miscellaneous, rather than medical. It is true, that many physicians in this country have filled distinguished civil and military offices, and every thing of interest relating to these deserves mention; but we apprehend, that the chief aim should have been to develope their acquirements in medicine. If they have published any thing on the science, a brief, but complete analysis of it should have been added—or if, (as is often the case) they were only known as practitioners, their introduction of new remedies—their peculiar views of diseases, and their treatment of them might have been specified. Here, however, we must again mention, that Dr. Thacher is not principally in fault. He has necessarily been in a measure dependent on his correspondents—some of whom seem to consider the appointment to a county court judgeship, a greater honour than to have discovered a valuable indigenous remedy, or to have subdued a herculean disease.

It may be remarked in the last place, as a matter of regret, that many names are excluded, doubtless from a want of sufficient materials. But we should have rejoiced to have seen the names alone, if nothing more, of all the surgeons of the revolutionary war—their place of birth—the time of their death—the regiments to which they were attached, and the campaigns in which they served. A few lines would have sufficed for all this, but it would have added to the interest of the work.

Notwithstanding these objections that we have thus frankly made to the "Medical Biography" of Dr. Thacher, we do
not hesitate to declare, that it contains much valuable information. He has brought together a greater number of names than probably any other individual of the present day could have done, and the lives of many cannot be perused without improvement. These pages speak of "men eminent in their day and generation"—of patriots who stood for their country in the cabinet and in the field—of scholars, philanthropists, and christians. The following extracts will give a favourable idea of the work.

The first is from the life of Dr. Boylston, and gives an account of the introduction of inoculation into this country.

"In the year 1721 the smallpox appeared in Boston, and pursued its usual desolating career, carrying with it the utmost terror and confusion. On this alarming occasion Dr. Cotton Mather, the learned and distinguished divine, communicated to Dr. Boylston a publication in the Transactions of the Royal Society, announcing the discovery of a new method of mitigating the virulence of this fatal disease. This intelligence was from Drs. Timoni and Pilarini,* being a concise account of the process of inoculation, as then practised in Turkey by scarifying the skin and applying the matter under a nut shell, but giving no other directions concerning the practice or mode of treatment. Dr. Boylston was forcibly impressed with the benefit of the discovery, and accordingly, after deliberating on the most safe and expeditious mode of thus artificially introducing the disease into the system, he communicated to the medical gentlemen in Boston, the plan he proposed to adopt, and the source whence he derived the first hints of the operation, desiring their concurrence in the undertaking. But Dr. William Douglass, a Scotch physician of some eminence, who had seen the publication in Dr. Mather's possession, and Dr. Dalhonde, a French physician, also of some repute in Boston, united in a violent opposition to the plan, and publicly denounced it as introductory of the plague, which had so often visited and nearly depopulated many cities in Europe and Asia; and declared that the attempt to put it into practice would be no less

* Dr. Emanuel Timoni Alspeek, who was graduated both at Padua and at Oxford, was residing in Constantinople in the year 1703, and was then struck with the instances which he witnessed of the mitigated nature of the smallpox, when the virus was artificially communicated to the human frame. He wrote an account of his observations to Dr. Woodward, by whom it was inserted in the Philosophical Transactions of the year 1714. Pilarini was a Venitian physician, and published in 1715 at Venice a statement of the success of the Turkish practice.
criminal than murder. The other physicians in Boston not only refused their co-operation in so novel and bold an experiment, but condemned it in their writings, and opposed it in every shape. Dr. Boylston, however, was a man of benevolence and courage, and finding before him a promising opportunity for diminishing the evils of human life, he was not afraid to struggle with prejudice, nor unwilling to encounter abuse in the noble cause. The clergy in general were disposed to aid the project, but a few of the less liberal were instigated to preach against it, and such was their influence, added to that of Douglass and Dalhonde, that the inhabitants became enraged, and were excited to commit atrocious acts of outrage on the person of Dr. Boylston. They patroled the town in parties with halters, threatening to hang him on the nearest tree. The only place of refuge left him at one time was a private place in his house, where he remained secreted fourteen days, unknown to any of his family but his wife. During this time parties entered his house, by day and by night, in search of him. Nor was this all; their rancor extended to his family; for one evening, while his wife and children were sitting in the parlour, a lighted hand grenade was thrown into the room, but the fusee striking against some of the furniture, fell off before an explosion could take place, and thus providentially their lives were saved. Even after the madness of the multitude had in some measure subsided, Dr. Boylston ventured to visit his patients only at midnight and in disguise.

Undismayed, however, by all this violence, and unsupported by the friendship of any but Dr. Mather, he commenced on the 27th of June 1721, while the smallpox was in its most destructive progress through the town, this untried experiment of inoculation on his own son, a child of thirteen years of age, and two blacks in his family, one of thirty-six, and the other of two years of age; and on all with complete success. This rekindled the fury of the populace, and induced the authorities of the town to summon him before them to answer for his practice. He underwent repeated examinations, and although he invited all the practitioners in Boston to visit his patients and judge for themselves, he received only insults and threats in reply. These facts we have thought worthy of notice, as remarkable in themselves, and as in some degree characteristic of the excitable spirit of the times. In thus encountering obloquy and reproach, however, Dr. Boylston but experienced the fortune of most of those who have attempted to innovate on long established usages, or to take the lead in the career of public improvement. The smallpox ceased its ravages in May 1722, and during its prevalence Dr. B. continued the practice of inoculation to all who could be induced to submit to it. He inoculated, with his own hand, two hundred and forty-seven of both sexes, from nine months to sixty-seven years of age, in Boston and in the neighbouring towns; thirty-nine were inoculated by other physicians after the tumult had in some measure subsided, making in the whole two hundred and eighty-six; of whom only six died, and of these, three were supposed to have taken
the disease in the natural way some days previous to their being inoculated: three of those who died, were his oldest patients. It appears by the accounts published by the select men, that during the same period five thousand seven hundred and fifty-nine had taken the natural smallpox, eight hundred and forty-four of whom fell victims to the disease, being more than one in six. In the vicinity of Boston it had been still more malignant and fatal. The utility of the practice was now established beyond dispute: and its success encouraged its more general practice in England, in which country it had been tried upon but a few persons, most of whom were condemned convicts and charity children. The daughter of Lady Mary W. Montague was inoculated in London in April 1721, being the first instance in Europe, and the convicts were made the subjects of the experiment in August of the same year. Dr. Boylston therefore is justly entitled to the honour of being the first inoculator in America, and this even before the single instance of the experiment in Europe had come to his knowledge."

Every body has heard of Perkins' Tractors, and we therefore presume the following account of the author will not be unacceptable.

"Dr. Elisha Perkins was born at Norwich, state of Connecticut, in January, 1740, and was educated for the profession by his father. He possessed by nature uncommon endowments, both bodily and mental. In his person he was six feet high, and of remarkable symmetry.

"His ability to perform active professional business was extraordinary; he frequently rode sixty miles a day, and generally on horseback, and this without the aid of artificial stimulants, never making use of ardent spirits. He had contracted a habit altogether peculiar to himself. When making his professional visits and inclined to sleep, he would hand his watch to a person and throwing himself on a bed or couch, give orders to be waked in five minutes precisely; if suffered to sleep six minutes, he would know by his feelings that the time had been exceeded, and whenever the time of sleep exceeded by one minute his rule, he invariably would say that he felt the worse for it. By this practice he was enabled to perform his duties with three or four hours sleep in the night for many weeks in succession, though subjected to great fatigue.

"Having descended from respectable ancestry, who long possessed a distinguished influence in the medical profession in that vicinity, he attained a considerable reputation and popularity. His acquaintance was very extensive, and his great liberality and social habits allured to his house gentlemen from different parts of the country, and his inquiring mind seemed ever to search for something new in every sphere which could better the condition of the human family. He had a happy facility in communicating his views, and turning to some valuable purpose such information as he
could derive from others. He made great sacrifices in establishing and supporting an academy in Plainfield, and other useful improvements in that town. He was esteemed as a man of strict honour and integrity of character.

"Dr. Perkins entered with peculiar zeal into a new project for the cure of diseases, which gained no inconsiderable celebrity at the time of its promulgation in 1796. Conceiving an idea that metallic substances might have an influence on the nerves and muscles of animals, and be capable of being converted to useful purposes as external agents in medicine, he was induced to institute numerous experiments with various kinds of metals, till at length, after several years pursuit of the object, he discovered a composition which would serve his purpose, and from which he formed his Metallic Tractors. These consisted of two instruments, one having the appearance of steel, the other of brass. They were about three inches in length, and pointed at one end; and the manner in which they were applied was, by drawing the points over the affected parts in a downward direction for about twenty minutes each time. The complaints in which this operation has been found most useful, according to Dr. Perkins, are local inflammations in general, pains in the head, face, teeth, breast, side, stomach, back, rheumatism, &c. Dr. P. obtained a patent for his discovery, and traveled through the country to disseminate his new practice, and his career was attended with great success. Numerous cures were effected by the employment of the Tractors in his hands and in those of others. His enthusiasm pervaded all ranks, and received the countenance of many enlightened physicians and philosophers. Pamphlets were published to explain the modus operandi of the new remedy, and the Professors of three universities in America gave attestations in favour of its efficacy. The operation was alleged to be similar in its principles to animal magnetism, or, according to some, animal electricity or galvanism.

"The fame of the Metallic Tractors soon reached Europe. They were introduced at Copenhagen in 1798, where twelve physicians and surgeons, chiefly professors and lecturers in the Royal Frederick's Hospital, commenced a course of experiments, and reported the result to Professors Herholdt and Rafn. The experiments, fifty in number, were deemed sufficiently important to demand publication in an octavo volume. The Professors introduced the term Perkinism in honour of the discoverer, and asserted that it was of great importance to the physician. 'We do not find it possible,' say the professors, 'to apply with any justice against Perkinism, the arguments and doubts which have been raised against animal magnetism. Our experiments have demonstrated to our satisfaction that there is a great deal of reality at bottom.' This book was translated into German by Professor Tode, Physician to the King of Denmark, and thence into English by C. Kampfmuller. After the death of Dr. P. Mr. Benjamin D. Perkins, his son, repaired to London, and securing a patent, immediately published a tract on the discovery. Soon after this, Dr. Langwor-
In Bath, having recently returned from America, commenced a course of experiments at Bath and Bristol hot wells, with a view of ascertaining the merits of the Tractors. The result was published in a pamphlet, containing a collection of cases, highly creditable, as he judged, to the metallic practice, with ingenious observations on the theory of their operation.

"In 1804 the Perkinean Institution, as it was called, was established in London, chiefly with the view of benefiting the poor by the use of the Tractors. The Right Hon. Lord Rivers was President, and Sir William Barker, Vice President of this Institution, and funds to a large amount were obtained by donations and subscription. In a pamphlet entitled an account of the Perkinean Institution, published in London in 1804, it is stated that the communications of cases are from disinterested and intelligent characters from almost every quarter of Great Britain, and that amongst others whose names are attached to these communications, are eight professors in four different universities, twenty-one regular physicians, nineteen surgeons, and thirty clergymen, twelve of whom are Doctors of Divinity. The cases published amounted in March 1802 to about five thousand. Supposing, says the writer, that not more than one cure in three hundred, which the Tractors have performed, has been published, and the proportion is probably much smaller, it will be seen that the number to this time has exceeded one million five hundred thousand! In answer to the objection that the cure was effected merely through the influence of the patient's imagination, the promoters of the Perkinean Institution asserted that multitudes of cures were performed on infants, and even on horses,* where of course such influence could not be presumed to exist.

Such is the history of the Metallic Tractors. It is to be considered a singular and unaccountable circumstance that the remedy should have been consigned to oblivion. Is it within the bounds of probability that the vast amount of authenticated evidence that has been produced, should be resolved into a delusion, a mere phantom of the imagination? However enthusiastic the promoters of the novel discovery may have been, it is most clear that autopsical evidence was in every instance at command, and might have precluded the possibility of deception. If, therefore, Perkinism has shared the fate of Animal Magnetism, there is no sufficient reason for supposing that its discoverer should be placed in the same class with Mesmer, as he undoubtedly was a man of honourable principles and character.

"Dr. P. directed his benevolence to another object of considerable importance in medicine. He introduced into practice a remedy consisting of a combination of the vegetable with the muriatic acid, in the form of

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* In many parts of the country the use of the Tractors upon horses had become as general as on the human body; and numerous extraordinary cures were certified.
common vinegar saturated with muriate of soda*. This diluted with three parts of hot water in the dose of a table spoonful, he administered with great success as a powerful antiseptic in the low state of dysentery and ulcerated sore throat. During the prevalence of yellow fever in New-York, in 1799, he visited that city, to avail himself of opportunities of testing by experiment the efficacy of the above-mentioned highly antiseptic remedy, believing that antiseptics had been too much neglected in that formidable disease. After about four weeks unremitted assiduity in attending the sick, he took the disease himself, of which he died at the age of 59 years." p. 422—425.

The following anecdote is related of Dr. Hunt.

"A cancer was forming in his head, where he himself could not observe it. He considered it dangerous, and even apprehended that his end was near. In 1789 he went to Boston, thinking it might be for the last time. The Counsellors of the Massachusetts Medical Society were then in session. At the request of his brother-in-law General Cobb, Dr. Hunt went to them that they might examine the cancer. They decided that it might be eradicated. It was agreed that on the next day the operation should be performed. Accordingly in a full meeting Dr. Warren was selected as the operator. 'We must bind his hands,' said Dr. Warren. 'No cable in Boston could hold them fast,' rejoined Dr. Hunt; and with an effort that astonished the physicians themselves, he quietly laid his head on a pillow, and bade them begin. The ear was first nearly cut off, though afterwards successfully replaced; then for thirteen minutes the operation continued, and every stroke of the knife, so near the auditory nerve, was like the report of a pistol. Dr. Hunt did not flinch in the least, though the sweat poured down his cheeks profusely. At length all was done; and as he raised his stately form, his first words were, 'Now, sir, give me a certificate.' Dr. Warren did not understand him, and asked for what reason. 'Why,' continued Dr. Hunt, 'that I was not cropped for making money.' Dr. Warren laughed, and pleasantly rejoined, 'I will give you none, for I hear that no physician in the west has made more money than you.' The meeting was then adjourned, all agreeing that they had never seen a man of more firmness or better humour." Appendix, p. 251.

The biographical sketches are prefaced by a "History of Medicine" in America. It extends through eighty-five pages, and contains much curious information in relation to the early

* This remedy is the same as is recommended by Dr. Wright of Jamaica, except that the acetic is substituted for the citric acid.
progress of medicine in this country. The great objection to it is, that it enters into details too minute and unimportant. That part of it which relates to the more recent history of medicine among us, is by no means so satisfactory, and abounds in errors and misstatements. Of the account which is given under the head New-York, part is pure fiction, and much of the remainder is a downright insult to the good sense and knowledge of the profession in this state and city. Whilst the pretended improvements in practical medicine of one or two individuals, whose sole claim to notoriety rests upon the puffs which they have published of themselves, are ostentatiously obtruded before the public eye, almost every thing of a character really creditable to the talent and science of the profession, is purposely omitted. We say purposely, because we are convinced Dr. Thacher never wrote this part of his history, and he has only fallen into this injustice, by a misplaced confidence in men skilled in all the arts of deception.

In relation to the recent controversies which agitated the profession in this city, Dr. Thacher, instead of maintaining the dignified impartiality of the historian, has chosen to enter the lists as a partisan of the defeated party. He gives the following very amusing account of the catastrophe which befell them.

"For a period of about seven years subsequent to the union of the two schools, the College of Physicians and Surgeons was on the march to the highest degree of eminence, and its reputation was recognised in every portion of the union. The class of students consisted of two hundred, and the number was increasing with the opening of each session. But from some cause[?] those professors, whose talents and zeal had been universally acknowledged,[!] were assailed with clamorous accusations, and charges of serious import were arrayed against them: these, however, on investigation by the regents in March, 1825, were declared to be unsubstantiated, and were pronounced by that honourable body, in their elaborate Report, to have arisen from jealousy and professional rivalry. Broils and contention, nevertheless continued, and the opposition assisted systematically in their purpose. In April, 1826, the professors, wearied with unavailing attempts to silence the opposition, came to the conclusion that "it would best consist with their own self-respect" to withdraw altogether from the
institution, and accordingly they tendered their resignations of their professorships and offices. The board of regents accepted their resignations, April 17, 1826." p. 55.

For the purpose of rendering this part of his history a little more complete, we present him with the following morceau.

"Five of the seven persons who constitute the medical faculty of Rutgers College, viz.—Drs. Hosack, Mitchell, Francis, Mott, and Macneven, were, previously to April last, the professors of the College of Physicians and Surgeons in New-York. They thought it necessary, or convenient, or politic, (and it is not exactly known which,) to resign their places; but, with the exception of Dr. Mitchell, all signified to the Regents their willingness to be re-appointed, finding, it is presumed, that this ruse de guerre did not answer expectation. The Regents however, who saw no difficulty in filling the chairs, to say the least of them, with gentlemen full as competent as those who had just resigned, refused to re-admit any one of them. Whereupon they applied to be made a faculty in Columbia College, and being refused, they applied to Union College for the same purpose; still not succeeding, in extremis they make an audible appeal to Rutger's College, New-Jersey, and are admitted: one of the conditions of the contract being, that Rutgers College shall receive the sum of ten dollars for each and every candidate which these gentlemen shall recommend to the degree of Doctor of Medicine!

"As the fact of the late Professors having applied for re-appointments, after their resignation, has been very boldly denied, I shall present the following extract of a letter, addressed by Dr. David Hosack to the Hon. Gulian C. Verplanck, as conclusive on this point:

"'When we the late Professors left the College, we entered into an obligation to each other to combine our interests and our labours. I find to my surprise, that Dr. Mott and Dr. Macneven have secretly offered themselves to the Regents as candidates for their former places in the College, and that too under any circumstances. I therefore feel myself absolved from my contract with them, but I cannot suffer my old friend and colleague, Dr. Francis, to become a sacrifice upon this occasion—if therefore he can be provided for, and the obstacles to our admission removed, I should certainly have no objection to return to that institution, but not otherwise.'—Annual Address before the State Medical Society, Feb. 1827. By James Manley, M.D. &c.

It is not our intention to enter upon an exposure of all the errors and misstatements which have crept into Dr. Thacher's work. The task would be too painful to us, knowing as we do, that with him they could never have originated. We ve-
Tetanus.

nerate his age and respect his talents, and most deeply do we regret that it has been his misfortune to fall into the snares of deceivers, who to bolster up a windy reputation, have been willing to sacrifice the character of this book, as well as that of its venerable author.


This little pamphlet was published by its author, who is a resident practitioner in this city, during a visit to Paris. It relates to a subject of great practical interest, and the manner in which it is treated, does by no means detract from the interest of the subject. It is at once concise and perspicuous, and may serve, we think, as a model to some of our more voluminous authors.

It comprehends two papers; the first on Tetanus, the second on Bilious fever. Both were read before the Medical Society and the Medical Atheneum of Paris, and both ordered their publication.

On the subject of tetanus, Dr. D. relates three cases of the traumatic form of that disease, all cured by cold affusions, (douches poides), with the concomitant treatment by means of stimulants, tonics, and diaphoretics. The first and last case fell under his own observation, and the second was communicated to him by a Canadian practitioner, named Dr. Arnoldy, of Montreal. The introductory remarks are so replete with correct reasoning and sound judgment, that we feel confident they will not fail to redound to the credit of their author, by being copied here as a specimen of his style of writing.

"Whenever a disease is unknown in its essence, all treatments are necessarily empirical, and, in this alternative, we cannot deny a decided preference to that which has succeeded the most frequently and in the shortest time.

"The nature of maladies is so imperfectly understood, not-
withstanding the improvements afforded by pathological anatomy, that we cannot wonder at being compelled, in most cases, to resort chiefly to empirical treatments in preference to means apparently the most rational. The reason is obvious: empiricism is constantly the result of observation, whilst rationalism is often the offspring of systems; and since we have been taught to discover with what readiness the most discordant and inconclusive facts are brought to support medical doctrines, we cannot but use the greatest reserve in adopting the practical consequences that are deduced from them. These reflections are suggested by the disease which is the object of this memoir.

Following this reasoning, we say the pathological nature of tetanus is not understood, its treatment is, therefore, empirical. Whatever opinion might be successfully adduced to prove the contrary, as this would not be a difficult matter to a thinking mind, we cannot, nevertheless, but felicitate the profession on the rapid progress that pathological inquiries are making at present in France, and in this country, as well as in some parts of Great Britain. This mode of proceeding in the knowledge and treatment of diseases was discovered and taught by Bichat, and although somewhat exaggerated by M. Broussais, forms the basis of the system now pursued in France, as amended and applied to practice by the modern adepts of the school of that celebrated reformer.

We now proceed to give a brief sketch of Dr. Doucet's cases.

The first is that of a farmer of Detroit in the state of New-York, aged 37, of a strong constitution. On the 6th of June he wounded his great toe, but continued his occupation; the wound cicatrised on the 24th, and constipation, painful tension of the back of the neck, extending along the spine and disturbed sleep, made their appearance.

On the 26th, emetic tartar is prescribed. The 27th, difficult motion of the jaw; twenty grains of calomel, with enemata, and a moderate dose of camphor and opium. 28th, mouth closed; fifteen buckets of cold water poured from a certain height, which produced syncope. After reaction, the
jew could be moved. In the evening, no exacerbation; eighteen buckets are poured again, followed with syncope. During the night, the symptoms grow worse. In the morning of the 29th, the dread of water increases the spasms; affusion of six buckets; no spasms until the following night. The 30th, a. m., affusion; enema producing one stool; in the evening, refusal of affusions; tobacco glyster, infusion of cinnamon as a drink, sixty drops of laudanum. These means bring on no change.

1st July, a. m., spasm violent. Fifteen buckets, with relief; in the evening, thirteen buckets, syncope, followed with some perspiration, spontaneous stools, motion of the jaw. For twelve more days the same treatment is pursued, and a final cure takes place. During the whole course of the disease, the stools and pulse had been natural.

The third case is that of a joiner 34 years old, of a robust constitution. Dr. Doucet at first suspected the case to be a bilious fever, the symptoms of which appeared prominent; but on the following day, tetanus was manifest; twenty ounces of blood are drawn, which bring on syncope. The next morning, 3d August, spasms increased; opium in large doses is given through the mouth and in glysters. The 4th, no relief; sixteen buckets of cold water, followed by syncope, and in the evening, opium as before. 5th, symptoms still increased; eighteen buckets, without much relief. 6th, spasms renewed several times during the night; eighteen buckets of cold water, followed with sensible amelioration. 7th, 8th, and 9th, symptoms return, but less violent; ten buckets every day, with the same concomitant treatment. 10th, convalescent.

The concomitant treatment pursued in both cases consisted of camphor and opium, warm wine, and aromatic warm drinks. The affusions were administered in the following manner. The patient is placed in a bathing tub, and as many buckets of cold water poured upon his head as he can bear; after which, the body is wrapped up in flannel, and diaphoresis promoted by means of dry frictions and the remedies above mentioned.
It is worthy of remark, that the syncope which follows the employment of cold affusions, is more or less sudden as the tetanic spasm is more or less violent, whereby the muscles are relaxed for some length of time. "This mode of subduing the muscular rigidity," says the *Gazette de Santé*, "appears in many cases preferable to bleeding. This last mentioned operation weakens all the systems in a direct manner, without bringing on any change in their relative situation. Cold affusions, on the contrary, by the violent impression they produce on the whole economy, determine a favourable change in the general sensibility of the nerves of locomotion, which, whatever may have been said to the contrary, are evidently the sole organs affected in tetanus. The patients submitted to this violent operation, says Dr. Doucet, rise from their syncope in a state of feelings totally different from what they experienced before its administration, and it is only some time after reaction has taken place, and after it has produced all its effects, that tetanic spasms return, until they are completely subdued by the repetition of this energetic process."

We must also observe, that both patients were of a robust constitution; and it may be a question how far the powerful means made use of for their cure, can be applied to others than those whose vital principle possesses a great degree of vigour.

Dr. Doucet deserves credit for having revived a therapeutical indication which has been long in disuse; nay, we cannot deny him the originality of cold affusions, in the manner he has recommended and successfully tried them; and if after more observations and trials, his process is found to succeed in other hands as it did in his own, Dr. Doucet will have rendered a very important service to science. Indeed, it was the conviction of the inefficiency of all our therapeutical means that prompted the great Paré to bury one of his friends affected with locked-jaw in a dunghill, thereby rescuing him from inevitable death.

Before we drop the subject, however, we beg leave to suggest the propriety of further researches into the real diagnosis of tetanus; for we have not been able to peruse Dr. Dou-
Tetanus.

cet's cases, without being struck at their peculiar mildness, the length of their duration, the influence of the concomitant treatment, and the obscurity of the traumatic cause. These reflections, which may be verified by examining the sketch we have given of them, lead us to suggest whether a great many of those cases reported as having been cured, some by cold water, others by warm applications, and other means which, however active, do not produce effects adequate to the severity of tetanus, might not be considered rather as belonging to that class of spasms and convulsions so easily confounded with tetanus. Were it necessary to prove our assertion of such errors often taking place in the diagnosis, we might refer to many cases extant; among others, to that related by Professor Chaussier, inserted in the Dictionnaire des Sciences Mé- dicales, article tetanos. "Professor Chaussier," says the writer of the article, M. Fournier-Pescay, "was called about twenty years ago, to a young man labouring under obstinate costiveness and violent pain in the intestines, after which tetanus had supervened. The physician ordered a potion composed of castor oil and syrup of peach flowers, which produced copious stools and brought out a large worm, and the tetanus immediately disappeared. This young man had received a few days before, a wound from a sword, which had but slightly involved the skin, and had stopped on one of the ribs. Had a traumatic cause been suspected, the patient would inevitably have perished. But the diagnostic was evident to a competent observer, and it did not escape the vigilant eye of the illustrious professor."

There are a number of cases on record, where violent spasms and convulsions similated tetanus, and it requires an experienced judgment to distinguish them. Those related by Dr. Doucet, however, appear to have been well marked instances of tetanus, whether the epithet traumatic can be strictly applied to them or not; yet, as we have already observed, we leave it to the reader to judge for himself. For ourselves, we do not hesitate a moment in recommending the process adopted by that gentleman; like Dr. D., the practitioner must not be deterred by the violence of its effects, for reac-
tion will shortly succeed the consequent syncope. We all know how insensible tetanic patients are to the action of the most powerful therapeutic agents. The writer of this article has read of a case wherein a physician in the West Indies administered more than three hundred grains of solid opium in less than three days. The London Medical and Physical Journal for 1818, contains one of the most remarkable instances of this sort; it is related by Dr. Painchaud of Quebec. After a copious evacuation of blood of nearly four pounds, that physician gave 3j of solid opium, and the same quantity of calomel, all in one dose. This was repeated several times, and a cure was speedily obtained.

We have little to say on the subject of Dr. Doucet's memoir on bilious fever. His object appears to have been merely that of making the citizens of Paris acquainted with the nature of fevers as observed in the western parts of this state and of Canada, and with the plan of treatment adopted both in the United States and in Canada against those diseases, which treatment is known to be widely different from that of the French in similar cases. One fact is worthy of notice, with respect to the bilious fever of Detroit. Dr. Doucet, after having left Canada, his native place, resided three years in Detroit previous to his coming to this city. During his stay at that place, he observed that bilious fever regularly appeared every fall, and with different characters every year. In the first year, it was complicated with hepatitis; in the second, with pneumonitis; and the third, with gastritis.

In his conclusion, Dr. Doucet hints at an object of preparing a more detailed and complete treatise on that fever, for which purpose he has collected a great number of notes and cases taken on the spot. Such an undertaking is well worthy of his attention, and he cannot fail to command the interest and best wishes of the profession.


A thin octavo, bearing the title of the first of these works, has recently been published in London. From the introduction which is prefixed, we learn that the tables of Prime Equivalents refer to hydrogen as unity, and are founded upon the assumption that the specific gravity of hydrogen is to that of oxygen, as 1 to 16; 100 cubic inches of hydrogen being regarded as weighing at mean temperature and pressure, 2.118 grains, and 100 cubic inches of oxygen 33.8 grains; water, therefore, composed of two volumes of hydrogen, and one volume of oxygen, consists by weight of 1 of hydrogen and 8 of oxygen.

The first of these tables exhibits the specific gravity of the most important gases, with their equivalent weights and volumes, and is intended to assist the student in acquiring correct notions of the relation between combining weights and volumes; and more especially, to illustrate the important facts respecting the combinations of gaseous bodies, for which we are indebted to M. Gay Lussac, who has shown that they unite in very simple proportions, and that the diminution of bulk which they often suffer in combining, is also an equally simple ratio.

In the second table, the elementary substances and their compounds are arranged nearly in an alphabetical order. The authorities upon which the equivalents of the former are given are, with few exceptions, annexed; and of the latter, the components are in most cases similarly exhibited.

It is wholly useless at the present day to say a word concerning the value of tables of this sort. The representation of the various chemical substances by numbers, has introduced so much simplicity into the various processes of the laboratory, that chemists appear only to vie with each other who shall determine them in the most accurate manner. New and often repeated analysis, the correction of errors in former
ones, and a general improvement in analytical investigations, are the means by which this object is to be accomplished.

Mr. Brande has availed himself of the best authorities in the construction of his tables, and we should suppose they would bear a reprint in this country. We make this suggestion for the benefit of some of our American editors of chemical books, in the hope that they will supply a deficiency no longer in the least degree excusable.

The first volume of the work of Mr. Dalton was published many years since, and is no doubt familiar to our chemical readers. Of the present volume we find an interesting notice in the sixteenth number of Brewster's Journal, from which we shall make a few extracts.

Mr. Dalton, in the volume before us, treats of compounds of two elements, and he divides it into six sections; the first on oxides; the second on sulphurets; the third on phosphurets; the fourth on carburets; the fifth on alloys; and the sixth on triple alloys. The volume is concluded by an appendix, containing corrections of his former volumes in consequence of new discoveries; and some remarks on recent investigations on heat.

Mr. Dalton enumerates six methods for ascertaining the proportion in which oxygen combines with a metal; first by combustion in air or in oxygen; second by solution in an acid, and subsequent precipitation by an earth or an alkali; third by precipitating one metal by another, whereby oxygen is thus said to be transferred from the one to the other; fourth by the hydrogen evolved in solution by an acid; fifth by transferring a lower oxide into a higher, by means of a solution of oxymuriate of lime (bleaching powder;) and sixth, by the nitrous gas, evolved during solution in nitric acid. The first four methods have been used by chemists for several years past; the two last Mr. Dalton has added from his own experience, having found them, as he says, "very useful assistants in various instances." "The last method by nitrous gas," he adds, "has indeed been proposed before, and labour bestowed on it, both by others and myself, but without
reducing the results to any certainty, till lately; the principal cause of this want of success has arisen from misunderstanding the nature and constitution of nitric acid." (page 4).

"It sometimes happens, that the nitrous gas is partly or wholly retained by the residue of nitric acid; but in this case the oxymuriate of lime may be applied to convert the nitrous gas into nitric acid." (p. 5.)

Accordingly this method of ascertaining the proportion of oxygen which enters into combination with a metal, is the one adopted by Mr. Dalton. But the method is objected to by the author of the notice, as not likely to be approved by practical chemists; for though assuredly it must be possible in some instances to ascertain the combining oxygen by this method, yet there is hardly an instance where other methods equally easy and more susceptible of accuracy, could not be adopted. Besides, the method rests on a somewhat remote deduction from an assumption that the sole product is a nitrate. Now we know that ammonia results, in some cases, from the action of nitric acid, and its production ought perhaps to be suspected in other cases where it has not yet been ascertained.

Under the section of the carburets, Mr. Dalton's opinion of the nature of steel is deserving of great attention.

"From the above account of steel, it is evident there is an essential difference between it and pure iron. That difference consists, according to the common opinion, in steel being a carburet of iron, or carbon and iron united. The fact of the union of carbon and iron, in the formation of steel, does not seem to me satisfactorily proved. Mr. Collier asserts, that iron gains about 1-180th of its weight by being converted into steel. But Mr. Muchet found, that though steel gains weight upon the iron when copiously imbedded in charcoal, yet it loses weight if the charcoal is only 1-90, or 1-100 of the weight of the iron. (Phil. Mag. Vol. 13.) The same ingenious gentleman seems to estimate the carbon in cast steel from synthetic experiments, to be 1-100th of its weight.

"From analytic experiments, however, there does not appear reason to believe that steel contains so much, if any
charcoal. Pure steel dissolved in dilute sulphuric acid gives hydrogen gas containing no carbonic acid nor oxide, neither is there any appreciable residuum of any kind in general.

"On considering all the circumstances, I am inclined to believe, that the properties that distinguish steel from iron are rather owing to a peculiar crystallization, or arrangement of the ultimate particles of iron, than to their combination with carbon, or any other substance. In all cases where steel is formed, the mass is brought into a liquid form, or nearly approaching to it,—a circumstance which allows the particles to be subject to the law of crystallization. We see that great change is made in steel by the mere tempering of it, which cannot be ascribed to the loss or gain of any substance, but to some modification of the internal arrangement of its particles. Why then may not its differences from iron be ascribed to the same cause?" pp. 216—218.

Concerning the alloys, Mr. Dalton advances the opinion, that they are chemical compounds. One striking instance of a true chemical compound occurs in the alloy called speculum metal. This alloy is formed out of tin and copper. The smallest deviation from the true proportions, it is well known, will spoil the alloy as a reflector. These proportions were, by laborious experiment, ascertained by Mudge to be 32 of copper to 14 1/2 of tin. Now dividing each of these quantities by 2, we get 16 of copper = 4 atoms, according to Dr. Thomson, and 7.25 of tin = 1 atom. This, be it observed, is the result of experiments made forty years ago, when atomic weights had as yet been unheard of.

But though we agree with Mr. Dalton in considering many alloys as chemical compounds, we by no means would take for granted, that all alloys are compounds. Thus an alloy of silver and steel was formed by Mess. Stodart and Faraday, by melting these two metals together. When this alloy was forged into a bar, and then dissected by means of dilute sulphuric acid, the silver was discovered, not in combination with the steel, but disseminated in threads throughout the mass. These threads of silver may give toughness to the mass, just as hair imparts strength to common mortar; but
the silver is as distinctly in a state of mechanical mixture as hair is in common mortar. In like manner small quantities of other metals or alloys are often added, for the purpose, as it strikes us, of imparting mechanical properties, by mixture rather than by combination. But besides combined and mixed alloys, we should regard it quite possible, that some alloys in the solid state, are in fact frozen solutions. Mercury, there is no doubt, is capable of holding some amalgams in solution; and till experiment shall contradict the supposition, we shall regard it as conceivable and probable, that some melted masses of metal will prove to be solutions of one metal or alloy in another metal or alloy; and that the solid masses derived from such liquids are congealed solutions.

The concluding remarks of the notice cannot fail to interest those who are acquainted with the history of Mr. Dalton.

"Having thus endeavoured to give some idea of the nature and merits of the volume before us, we take leave of it, recommending it to the attention of our chemical readers. The work is one which will not be read as an introduction to chemistry; but it will be perused with interest by all who have made some progress in the science, and who make its doctrines a subject of habitual reflection. Of almost any other chemist than Mr. Dalton, we would have complained of the ignorance in which, it is evident, he has kept himself of the researches of other chemists. But we cannot speak in the language of complaint of Mr. Dalton, known to the world as a very apostle of science—leaving all worldly advantage behind to follow it, and proceeding on cheerfully, without scrip, or purse, or staff. We know not how to express the feelings with which we glance over the last three pages of this volume, containing a list of the scientific papers which Mr. Dalton has published during a period of thirty-five years. One discovery of his gives a glory to the scientific character of the nation, independent of other discoveries which alone would rank him high as a philosopher. And for whose good? We cannot look to this list without believing that Mr. Dalton is more likely to have lost money than to have gained by all his publications. In other countries, less happily constituted go-
vernments than our own would not have hesitated to put into the hands of such a man the means of prosecuting, with independence, those discoveries which in all after ages were to render his native land illustrious among civilized nations. Almost the only means of profit held out to scientific men in this country is lecturing,—an occupation not always adapted to individuals, who are yet well qualified for the prosecution of scientific research. Assuredly it does become the scientific journalist to complain loudly, that even this precarious encouragement to science is about to be taken away; for a system has begun of publishing lectures, taken for this purpose by professional reporters, who, by attending the same course twice, may copy a lecturer's manuscript as accurately as if it were before them; and the law has, in due solemnity, pronounced that this description of robbers, who prey upon the vitals of science, are not to be molested in their lawful calling in this free country. We have no fears for the progress of science; but, looking to the shameful neglect of their rights in this country, and to the munificent patronage which is extended to scientific men in other countries, we have fears for the share of glory that will fall to Britain. Amidst these complaints, however, it would be unjust in us to forget that in the case of Mr. Dalton, the neglect upon which we animadverted was alleviated by his being presented, through the hands of Sir Humphrey Davy, with a royal medal, when his own genius had established a fame which envy could no longer tarnish, and to which royalty could add no lustre."
ART. I. An Eulogium on the late Wright Post, M.D. By J. Augustine Smith, M.D. Professor of Anatomy and Physiology in the College of Physicians and Surgeons. Delivered in the Chapel of Columbia College, at the request of the Medical Society of the City and County of New-York, on Wednesday Oct. 8, 1828.

It has not often happened, Mr. President, and Gentlemen of the Medical Society, that surviving friendship has been called upon to commemorate departed worth, that was modest, quiet, and unobtrusive. For in every age and in every country, the exalted in rank and the daring in action, have exclusively claimed and received, whether living or dead, the admiration and applause of their fellow-mortals. At particular times indeed, and under extraordinary circumstances, some exceptions to the absolute universality of this remark may have occurred. Thus, during that most wonderful era of Grecian history, which is destined, I apprehend, to stand for ever unrivalled in the annals of our race, philosophy and philosophers enjoyed a distinction which in no time to come can they again command. And at later periods, men who were willing to shed, or who did actually shed their blood for the faith which they professed, obtained from their adherents the applause which they so justly merited. But it was from their own immediate followers alone that these martyrs derived their honours; the mass of mankind still reserving their plaudits for kings, statesmen, and above all, warriors.* Why these last should enjoy this pre-eminence

* Time, however, does speedy justice to those who have nothing but political eminence to distinguish them; the fame of such persons being as evanescent as it is undeserved. With the really great among writers, philosophers, and patriots, the case is reversed—the lapse of ages but
would form a curious, and as far as my reading extends, an untouched subject of philosophical inquiry. But this is not the occasion for entering into such disquisitions. The fact is all that at present concerns us, and that I conceive to be as unquestionable as the sentiment on which it is founded is illusory, in the extravagance at least to which it is apt to be carried. That a just and frequently a very high reward should be extended to a successful military leader, is right and proper; but that a false and most mischievous importance has been attached to seats in arms, is, I think, demonstrable. Let us hope then, that this delusion, like so many others, will pass away, and that men will learn at length to appreciate as they should do, those more humble pursuits by which good is conferred without the pomp of state, and above all, without the miseries of war. Among these pursuits medicine must ever hold a high rank, and in that profession few persons in our country have filled so large a space as the late Dr. Wright Post. For twenty-seven years he was the leading practitioner in this city; and the history and character of a man who could for so long a period maintain such a station, cannot be, and as we shall soon see, is not devoid of interest, particularly to those who move in the path which he so successfully trod. I must premise, however, that of Dr. Post's early years my information is exceedingly scant, as I have been unable to procure many particulars of this portion of his life. The few which it has been in my power to collect, I will now detail. *

Dr. Post was born, I understand, near Hempstead, Long-Island, about the year 1766, and was sent to a neighbouring

brightening their reputation. The number of these immortals to be sure is but small; mere rank, however, will not confer a seat among them; the names of emperors, &c. though chronicled, only slumbering in our books. Successful leaders of armies fare better, I acknowledge, though even Alexander must yield the palm to Aristotle, and the Duke of Marlborough is altogether in the shade compared with Newton and Locke.

* As soon as I determined to comply with the request of the Medical Society by delivering this Eulogium, I took measures to procure the necessary facts. Circumstances beyond my control foiled my efforts, and hence the meagerness of my narrative.
school. What progress he made in his studies I do not know, but in 1782 he was a student of medicine with Dr. Richard Bayley, a gentleman whose daughter he subsequently married. In 1789, at the early age of 23 years, he was a lecturer on anatomy. In 1792, he was appointed professor of surgery in Columbia College, and immediately went to London to improve himself in his profession. On his return, he was made professor of anatomy in the same institution. He then took a second trip to Europe, for the purpose of procuring an anatomical museum, and brought back the one now in the College of Physicians and Surgeons, at that time undoubtedly, and perhaps still, the first on the continent. His lectures on anatomy were delivered in Columbia College until the medical department of that institution was merged in the College of Physicians and Surgeons, in the year 1813. In this last establishment he continued his labours, which were alike creditable to himself and useful to others, until 1826, when he resigned his anatomical chair, and the presidency of the College. To this latter office he had been appointed on the death of Dr. Bard, 1821.

The health of Dr. Post was always feeble. In 1815, he was obliged to cross the Atlantic for its improvement, and so much benefit did he derive from the voyage, that he was enabled on his return to resume his professional duties. With these he was occupied until the close of the last winter, when indisposition confined him to his house. Hectic fever supervened, and on the 14th day of June he was released from his cares.

It should have been stated, that in the year 1792 Dr. Post was appointed one of the surgeons of the New-York Hospital. This situation he filled with reputation to himself and greatly to the advantage of others until 1821, when no longer able to discharge the active duties of the place, he resigned it, but continued a consulting surgeon of the institution until his death.

Such is a brief statement of the circumstances which marked the life of Dr. Post. Not numerous, nor to superficial observers important, these circumstances may, nevertheless,
afford matter for useful reflection to two classes of persons. First, to those who are fond of philosophising upon the more general events of this sublunary world. And secondly, to those who, although more indifferent to remoter speculations, are still anxious to draw lessons of practical instruction from the example of those who attain what all do seek—wealth, rank, and reputation. To the former, I shall offer some remarks connected with the progress and condition of the two more important branches of the healing art; with the latter, I will examine the character of Dr. Post in reference more particularly to the great success which attended his professional career.

I have already remarked, that Dr. Post was one of the surgeons to the hospital. In that capacity, he tied with success in the year 1813, the external iliac artery. In 1817 he was equally fortunate with the subclavian. This operation was then unparalleled in surgery; but since that time, such has been the improvement of this branch of our profession, that arteries still deeper seated have been reached. And I take occasion to mention, and I do it with pleasure as a just compliment to our city and our country, that a surgeon of New-York, Dr. Mott, is without a rival in aneurismal diseases. In one instance he passed a ligature around the inominata, and in another, he secured the common iliac—a feat as yet unequalled in any other quarter of the globe. On the latter occasion the event was favourable. A similar result, I have already observed, attended the operations of Dr. Post; so that we can now see why it is, as the bills of mortality prove, that the mean average duration of human life is extended. From the beginning of the world up to our day, patients like these would have been abandoned to their fate; but thanks to the genius of Hunter, and the intrepidity and dexterity of modern surgeons, the span of existence under such circumstances is now prolonged, and death, for a season is robbed of his victims.

If such be the improvement in one great department of the healing art, our attention is naturally turned to the other, and the question immediately presents itself, has an equally beneficial
change taken place in that also? Is the curative power of medicine as much extended as that of surgery? The reply, I fear, must be in the negative; and if so, we cannot but ask ourselves, how has this happened? Why have not the physicians kept pace with the surgeons in meliorating the condition of man? In solving this inquiry, it is but fair to observe in the first place, that the task of the surgeon is comparatively easy. Of the maladies which he has to treat, by far the larger portion comes under the cognisance of his senses; his eye and his finger are most efficient aids; whereas the medical prescriber is, to a great extent, deprived of these facilities, and must rely upon inferences rather than perceptions.

In the next place, surgical complaints are much more uniform than diseases strictly medical. In the former, there is little scope for the operation of those perturbing causes to which I have elsewhere* alluded, and which in the latter, are perpetually modifying results in a manner which to us is altogether inscrutable. Hence the experience of one surgeon is a much surer guide to his brethren, and may be much more implicitly relied upon than the observations of a physician, supposing both to be equally desirous of stating the truth; and what is more uncommon, supposing the perceptive powers of both to be equally unperverted by preconceived opinions and hypothetical notions.

But after making all these allowances, it must still be acknowledged, that medicine has been less successfully cultivated than surgery, and the question of course recurs, whence this relative inferiority? I say relative inferiority, because I acknowledge that the improvement in medicine has not been small, though far less than in surgery; whence then the difference? It has arisen, I conceive, in this—the surgeons with a plainer path before them, have not disdained the line and plummet of sound philosophy; in other words, "They have experimented with caution and observed with care, and from facts thus ascertained, have deduced the conclusions which they warranted." Take the very disease, aneurism, of which we

* Vide page 172 of this volume.
have been speaking as an example. Mr. Hunter having probably observed, that the main artery of a limb is sometimes obliterated spontaneously and sometimes destroyed by accident, and yet the member did not perish for want of a due supply of blood, determined to try the effect of tying such vessels when affected with aneurism. The event was favourable, and from that point surgeons have proceeded until they have attained the splendid results already mentioned. And how have the physicians acted? Why with a preposterousness almost inconceivable, they have entirely reversed this the procedure of the surgeons. Because their footing was unstable, they have been heedless; because it was dark and uncertain, they have been rash and confident; and because their steps were beset on all sides with responsibilities the most awful, they have but dashed on the more recklessly, plunging without chart or compass into oceans of conjecture and hypothesis, and pursuing phantoms which have forever risen and forever faded upon their eager and deluded sight. But enough of these follies. Relief is at hand. The march of common sense is manifest; and I look forward to the day when the dominion of philosophy and right-reason will be as absolute in medicine, as it has already become in all the other departments of human knowledge.

The progress of surgery then has never been retarded by physiological systems, as they are sometimes called, or the happy process of advancing from that of which we know nothing, to that of which we likewise know nothing. This mode of progression, I may remark, must necessarily be adopted by all those who are determined to explain every thing in the animal economy. For there are many parts of the human system whose uses or modus operandi are at present altogether unknown, and there is a yet greater number of phenomena of which the causes are involved in equal obscurity. These obstacles, so long as they subsist, are of course insuperable to every one who thinks an observance of the rules of philosophising of any importance in the discovery of truth. Not so our theorists however. To them this state of double ignorance has proved the most convenient thing ima-
ginable. It has enabled them, after their manner, to find employment for every discoverable organ, and to furnish a solution for every conceivable difficulty. The means by which these ends are accomplished, are two-fold. The first consists in assuming the facts from which the conclusion is to be drawn, and then from the conclusion establishing the facts, which like all arguments in a circle, proves any thing or nothing according to the acuteness and disposition of the reader.*

The second plan consists in the use of the argumentum ad ignorantiam. It is thus applied. Suppose inquiry be made of one of these theorising gentlemen, what purpose does any particular portion of the terrâ incognitâ of our bodies subs-serve? He answers, such and such are its uses or modes of action, according to the peculiar notions, whatsoever they may be, which he has to support. Very well, the querist rejoins, all this is very well, provided you can prove it. Prove it! exclaims the man of notions, Prove it! Why if such be not the use of the part in question, pray what is its use? If on the other hand, the cause of some phenomenon be required with regard to which he is just as wise as he was on the former occasion, he refers it with the greatest complacency and confidence to some viscus, of which little or nothing is known. Most commonly the nervous system is selected on account of its extent, importance, and our profound ignorance of the manner in which its functions are performed. But whatever part may be chosen, the same argument, mutatis mutandis, is had recourse to—if such be not the cause, use, &c. pray what is it? And such is the reasoning upon which human life and human comfort have been made to depend!

But from all such follies Dr. Post was entirely exempt. His cool† and clear head was not to be disturbed by "words

* Could every person who undertakes to put forth new notions in medicine, be required to prove his premises before he proceeded a step further, what an infinity of discredit to the profession, and mischief to the public would be saved!

† To ordinary observers, Dr. Post's moral temperament bore the same stamp with his intellectual powers. But however cold in appearance, he
without knowledge.” Untrained, indeed, in the schools, he had that sound sense which no training can give, and which renders such training, so far as the individual is alone concerned, in a great measure unnecessary. And this brings me to the second head of my discourse—the intellectual character of Dr. Post—a character little apt to be appreciated as it merits by the world at large. For in this age of noise, bustle, show and glitter, something striking is always required, and if there be nothing to dazzle, many infer there is nothing to admire. Accordingly, it has been more than once observed to me, that Dr. Post was not an extraordinary man—nothing uncommon. No? How did it happen then, that at the age of twenty-three he was a lecturer on anatomy; that for nearly thirty years he was at the head of his profession in this city, and now that he is gone, not only is there no one prepared to succeed him, but we cannot even designate the person who is ultimately to fill his high and lucrative station? Why do not some of those who consider Dr. Post as so very common a personage, step into the place which he has vacated? The inducements are ample. Honour and emolument on the one hand, and the esteem and confidence of his fellow-citizens on the other, await the successful aspirant. Yet he appears not. Will it be said, that these things come by chance—that Dr. Dr. Post was lucky. Let no man thus solace his vanity. Every one may rest assured, that events are no more fortuitous in the moral than they are in the material world, and that in the one as in the other, every effect has its appointed and apportioned cause. To great permanent success then, though other things be requisite, corresponding abilities are indispensable. I say permanent success, because I acknowledge that had a fund of feeling, not lying upon the surface indeed, though when touched, of the warmest character. This feature I had suspected from some incidents which I had myself witnessed, and my conjecture was confirmed by a gentleman whose opportunities of knowing Dr. Post intimately were more ample than mine. That gentleman remarked to me, that in the chamber of death, under circumstances of unusual and deep distress, he had seen Dr. Post cry like a child.
by puff and parade, by sounding his own praise and by hiring others to "swell the note," a man may acquire a certain kind of notoriety. This is particularly easy in medicine, from the acknowledged incompetency of the public to judge of medical men. But this mushroom-fame never lasts. In the end justice is sure to be done, and mankind, though imposed upon for a time, finally reduce the vain pretender to that obscurity from which he so improperly and frequently so surreptitiously emerged. Now whatever may be thought of Dr. Post in other respects, here all will concur. All will concede that no man ever existed who had less recourse to fictitious or nefarious aids to bring himself into notice. No newspaper paragraphs announced his cases or his cures. No bawling sycophants proclaimed the wonders which he wrought, to raise a reputation on which they might subsequently batten. Precisely the reverse of all this was the fact. Every thing connected with Dr. Post was quiet and unobtrusive, perhaps retiring; and his success, as we shall see, was the result of very different causes.

I have already stated that he was for nearly thirty years at the head of the profession in this city. Now to acquire and maintain that station, two things are necessary—the confidence of the public, and the good opinion of the faculty. To obtain the former, mere ability will, in a great degree suffice; but to secure the latter, something further is required, virtue must be superadded, a flaw in the heart being here as fatal as a defect in the head. For so extremely delicate is the nature of the intercourse which takes place between medical men and their patients, and so easily and with such apparent security and advantage can propriety in this respect be violated, that a man if unrestrained by strong moral principle, infallibly does wrong. Sooner or later, however, his offence is detected; the offender is then opposed by his brethren, and if he persist, he is finally scouted from their ranks. But so unlimited was the confidence of, I believe, every practitioner in the city in the honesty of Dr. Post, that no patient could be more anxious to receive the benefit of his advice than the attending physician was ready to meet him in consultation.
Does not this at once explain what to some appeared so marvellous, the success of Dr. Post? Where is the mystery now? The public appreciated his talents, and the profession relied on his virtues. And what renders Dr. Post's character in this respect the more praiseworthy, is this, that while perfectly correct himself, he well knew how to rebuke and to punish any medical man who should infringe, with regard to him, those rules of good conduct and gentility which should regulate medical intercourse. Were the plan adopted by Dr. Post generally pursued, of arraigning, exposing, and denouncing at the tribunal of the profession, offenders of this description, there would, I am sure, be more harmony in the profession; since fear would then constrain those whom principle could not govern. I may observe, that the anecdote on which the foregoing statement is founded, I had from Dr. Post when on a visit to this city in the year 1819. His narrative impressed me forcibly with regard to the energy and decision of his character—qualities not often called forth in a man so cool, correct, and dignified as himself.

While on this part of my subject, I cannot avoid the gratification of mentioning the good understanding which always subsisted between Dr. Post and myself. At first in opposition, then joint profissors, and lastly, independent friends; no hostile feelings were at any time manifested with regard to each other, nor did any, I am persuaded, ever exist. And now, by a train of circumstances the most singular and unexpected, it has fallen to my lot to hold up, however feebly, to the just admiration of his fellow-citizens, the only man with whom, in the whole course of my life, I have come into any sort of collision, whose talents and whose station could for a moment induce me at least to consider him as a rival. This may savour of pride. If so, I hope it is of honest pride; and the sentiment, if a compliment to the living, I have reason to believe was esteemed no reflection by the dead.*

* Speaking of Dr. Post to a most esteemed friend when on my way to the south in 1814, I expressed what I have stated in the text. Circumstances have caused me to think that the remark reached the ears of Dr. Post, and that it was not disagreeable to him.
Dr. Post.

I have thus, Mr. President and Gentlemen of the Society, brought to a close my remarks upon the life and character of Dr. Post. From the account which I have given, two useful lessons may, I think, be deduced. First, that Fortune is not so capricious in her favours as many imagine; and secondly, to secure those favours, in other words, to attain the success of Dr. Post, we must first acquire his skill and tact, and, what is perhaps more difficult, certainly more rare, we must practice these qualities with his steadiness and virtue.

Before I conclude, it is proper for me to observe, that our profession is sometimes charged with want of attention to religious duties. How far this remark is well founded, I need not inquire. It certainly did not apply to Dr. Post, who I am assured, bowed to the fatal mandate in that frame of mind which becomes beings so frail and imperfect as ourselves.

Such then was Dr. Post as a man, a physician, and a christian; and I have only to add, that at the final adjustment, may we all be gathered where there is reason to hope that he will be garnered.

P.S. Some gentlemen, whose opinions the author highly respects, have represented to him, that the phraseology which he has permitted himself to employ, with regard to medical theorists, to whom alone his observations apply, is too strong. This may be so. But the author has so often seen and so keenly felt the mischiefs resulting from the propagation of unfounded and hypothetical notions in medicine, that he has perhaps unconsciously acquired a morbid sensibility on the subject. Truth however, and particularly general truth, when promulgated with good motives, and with a just hope of producing good results, cannot surely be condemned, even though it be couched in language somewhat warm. Does the author then expect, he has been asked, that "good results" will ensue from what he has done? To this inquiry the author has replied, that the spirit of reformation is abroad in medicine as well as in every other department of human knowledge, and indeed in every other avocation in which mankind is
engaged, and that he flatters himself he may accelerate a current which already sets, however feebly, in favour of sound medical principles. For the rest, the author is well aware that to attempt, nay, to aid a reformation, no matter what the subject to be reformed, is so certain to excite displeasure, that the task will never be attempted by him whose love of present applause is stronger than his sense of duty.

With these remarks the author takes his leave of medical theorists, adding, however, that his friends have suggested to him, that he himself from his propensity to generalize, is obnoxious to his own censures. If such be the fact, the author only adds one to the long list of those whose precepts have been better than their example, and he sincerely hopes that his brethren of the profession will profit by what is right, while, more fortunate than himself, they eschew what is wrong.

One further remark and the author will conclude. He takes it for granted that the statements contained in his address are essentially correct, because in that particular he has not heard them seriously impugned. His alleged fault is altogether different, and consists not in stating propositions which are erroneous, but in making acknowledgments, which however well founded, are deemed derogatory to the profession. Upon this point a solitary observation shall suffice. Such is the reliance of the author upon the value of medicine as a means of alleviating many of "the ills that flesh is heir to," and such is his opinion of the virtue and abilities of many of those who practise the profession, that he is at all times willing the profession itself, and these its practitioners, should stand revealed before the public, in the full confidence of their strength, assuming nothing which is false, concealing nothing which is true; and let him whose sensitiveness has been ruffled, proclaim his higher and juster views.

Park Place, 14th October, 1828.
Art. II. Notice of the late William Handy, M.D. of New-York.

Died in this city, September 22, 1828, William Handy, aged 62 years. He was born in Newport, Rhode Island, Sept. 21, 1766. After the usual preparatory study, under the late Dr. Isaac Senter of that place, he went to Europe in the autumn of 1785. He attended the different courses of lectures in the University of Edinburgh for the three succeeding sessions, and graduated as M.D. in June 1788, when he defended an inaugural dissertation, "De Foetus humani nutrimene." After the completion of his collegiate studies, he passed over to the continent of Europe, and embarked from Copenhagen in Denmark for India, and did not return to his native place until the year 1790. In 1791 he began the practice of physic in Charleston, S. C., and was soon after appointed the resident physician of that city. This office he held until the death of his father, in 1794. On that occasion he was compelled to return to his native place, and his attention became therefore directed to other objects, which interfered with the immediate duties of a medical practitioner. Being thus engaged, he made a second voyage to India, and afterwards retired to a farm at Grotton, in the neighbourhood of New-London, Connecticut. In 1807 he resumed the practice of physic, which he pursued for several years afterwards in this city. In 1817 he was appointed by the Governors of the New-York Hospital, physician to the Lunatic Asylum, and continued to perform the arduous duties of this station, in this and the succeeding year, until ill health compelled him to resign the office. It was his custom, during this period, to record the most interesting cases that occurred in that institution; and had his connection with it continued, it was his intention to have pursued this object with the same fidelity and accuracy with which he began it. His conduct here claimed the decided approbation of the Governors of this charity; and it may with great truth be averred, that through the whole period of his medical career, both at Charleston and New-York, his deportment to his professional brethren and to the
sick entrusted to his care, was such as to command universal respect. His judgment was clear and discriminating—his duties were fulfilled with conscientious rectitude. An exact period of sixty-two years intervened between his birth and his death, and more than forty years had elapsed from the period of his graduation. For some time previous to his dissolution, his health had been greatly impaired, and he was perfectly resigned to his fate. Among his collegiate associates, are now to be reckoned some of the most venerated members of the medical profession.

W. H.

QUARTERLY HISTORY

OF

IMPROVEMENTS IN MEDICINE AND SURGERY.

ANATOMY AND PHYSIOLOGY.

An Account of a New Method of Embalming, and of Preserving Subjects for Dissection. By Sir G. S. Mackenzie, Bart., F.R.SS. L. and E., &c. In a Letter to Dr. Christison.—Sir, ... Although still engaged in attending to experiments connected in some degree with the subject of this communication, the results of which may be beneficial to myself, as well as to the public, the preservation of dead bodies for dissection has become a matter of so great importance, that I feel I should do wrong were I to withhold any longer from the medical world such results as I have already obtained. As the discovery of a new method of embalming prompted me to attempt discovering means to preserve bodies in a state fit for the dissecting-room, I will proceed to describe it first; for, though it is needless to detail all the steps by which I advanced to what is in effect exceedingly simple, still it is proper to exhibit the principle on which I operated.
The object I was originally in search of was a substance which had a strong attraction for moisture, but no corrosive qualities. From previous observation I conceived that molasses would answer my purpose. On trying its effect on muscle, I was soon made aware that this article was likely to become more valuable than it has hitherto been, and that it might be applied to something more dignified than the manufacture of ginger-bread. A mass of flesh immersed in it was in a few days deprived of all its juices, and the fibres became rigid. It was reduced into a state resembling pemmican. During the process an acid was produced, resembling the pyrolineous in some degree, and most probably a modification of the acetic. This was made sensible by the taste of the flesh. After I had made many trials, a medical friend in Edinburgh immersed a hand and part of an arm which he had amputated, in thick molasses; and after a few weeks it was converted into most perfect mummy, surpassing any Egyptian specimen I have ever seen. On being removed from the molasses muscle becomes drier; and I have specimens in my possession that I consider as sufficient proofs that bodies, after being immersed in molasses for a sufficient length of time, washed and exposed to gentle heat, and then wrapt in cerecloth or oiled silk, may remain unchanged for any length of time. The power of molasses is such, that I feel assured that disembowelling is not necessary, (unless in cases of dropsy,) injection by the oesophagus, trachea, and rectum, and the introduction of a portion into the abdominal and thoracic cavities, being probably sufficient to preserve every part. Nor should I conceive it necessary to remove the brain; it will be sufficient to give access to the molasses by one or two openings. The molasses should be thick, that is, as free from water as possible, its fluidity being preserved. It acts in two ways, by its absorbent, and by its antiseptic qualities. In all cases in which it is desired to send bodies for interment from a distance, or to prevent unpleasant effluvia, the application of this substance will be found equally, and I believe more effective than the expensive means hitherto employed.

Having observed the complete check given to putrefaction by molasses, I became anxious to apply it in such a way as to preserve subjects for dissection. In its undiluted state it was unfit; and on diluting it moderately with water, I found that with muscle a fermentation was produced, not a very active one, but sufficient for the production of so much of the peculiar acid as seemed likely to endanger the vascular and nervous structures, and even the muscular fibre. Proceeding to dilute more and more, I at last found that by doing so the tendency to fermentation was diminished, but not prevented to such a degree as I wished. I likewise found that it was important to exclude the air; but in attempting to do so there was risk, if gas were extricated, of the vessels giving way. After many trials I was induced to add salt to the solution of molasses; and the result of a trial of four months' duration makes me sanguine in the hope that my object is attained. But from the great scarcity of subjects, I have had no opportunity of making the experimentum crucis. I have operated only on
beef and mutton. Such, however, are the results, that I have no hesitation in recommending the following method of preparing subjects for being carried to a distance, or for preserving such as may come directly to the dissecting-room, and are not immediately wanted.

The subject being placed in a cask, let it be filled with liquor made of one measure of molasses, one of salt, and fifteen or sixteen of water. The head of the cask may be put on, having two small holes in it, and after twenty-four hours liquor may be poured in by one of the holes, while any air in the cask escapes by the other, and then both may be plugged up and the cask forwarded to its destination. I have little doubt, if the cask be perfectly tight, of subjects coming in a good state from the West Indies or the coast of Africa. But abundance may probably be got without going quite so far. The specimens I have examined at the end of four months, and which have undergone no unfavourable change, are in a stone vessel closed by two folds of bladder; and I expect that at the end of the year they will be found unaltered. No apparent fermentation has taken place, and no formation of mould or scum, as when the liquor and flesh are left exposed to the air. The parts are quite soft and entire. I have informed Dr. Turner of the means to obtain the peculiar acid for examination.

One thing has encouraged me above all others to proceed; and that is the idea, that, when a subject has been impregnated with the liquor, the poison which proves fatal when an accidental scratch is given by the scalpel will be destroyed. This may be easily ascertained by experiment on some animal. The great distance of my residence from any medical school has retarded my progress. But I now commit the farther prosecution of the matter to those for whose benefit I have hitherto been experimenting, intending to confine myself to another application of molasses, also likely to be attended with benefit. The time has been when anything coming from a scientific amateur would be held in contempt; but I fear nothing of the kind in these days, when anatomy and physiology are reckoned branches of liberal education. I may, therefore, further express a hope, that ere long, by the use of the above liquor, dissecting-rooms will be entirely freed from all disagreeable smells, and the air of hospitals rendered salubrious. The latter by means of some of the liquor or diluted molasses alone being poured into all utensils for receiving *ejecta*, the effluvia from which propagate disease, as well as retard the recovery of patients. Nor is it unreasonable to hope that some trials will be made of the administration of molasses internally, and of its effects applied externally.

The specimen of mummy referred to above is in the possession of my friend Dr. A. Combe. I am, Sir, your most obedient servant,

Coul, 5th May 1828.

G. S. Mackenzie.

*Note by Dr. Christison.*—I have communicated this letter for insertion in the Edinburgh Medical and Surgical Journal, at Sir G. S. Mackenzie's request. I may add that I have seen the preserved hand in Dr. Combe's possession, and can bear witness to its complete momification. It was
made last August, and no pains whatever have been taken to exclude the influence of the causes which promote putrefaction; yet it is not in the slightest degree decayed. 23d May.—Edin. Med. and. Sur. Journal.

Cold Injection for Anatomical Preparation.—If a mixture of varnish and vermilion has a small quantity of water mixed with it, it soon sets and becomes hard. This affords an excellent composition for anatomical injection, being very beautiful and very penetrating, (so much so, that it frequently returns by the veins,) and requiring no heat to be applied to the subject. The writer of this article frequently had, in the course of his medical education, the office of preparing this injection, of which he has, however, unfortunately forgot the proportions, and the particular nature of the varnish. It was, he thinks, a spirit varnish; the water was not mixed until the instant the injection was wanted, when it was well worked up with the syringe, and immediately thrown in; in the course of a night it would have set beautifully. This particular kind of injection was invented by an American anatomist of the name of Ramsay, and preserved as a valuable secret by him for the exclusive use of his own dissecting-room. The proportions, &c. of the ingredients will soon be attained by a few experiments.—Brande's Quar. Journal.

On the Mechanism of the Act of Vomiting. By Marshall Hall, M.D., F.R.S.E., &c &c.—Two opinions have divided physiologists respecting the nature of the act of vomiting. It was originally and long thought that this act consisted simply in a sudden and forcible contraction of the stomach itself.* Afterwards Bayle, and Chirac, and more recently M. Majendie, considered that the stomach is inactive, and evacuated by being subjected to pressure by the simultaneous contraction of the diaphragm and abdominal muscles.

It appears to me that neither of these opinions is correct. M. Majendie distinctly proves by actual observation, and by the substitution of a bladder in the place of the stomach, that the contraction of this organ is not usually subservient or necessary to the act of vomiting. I refer to the interesting paper† of that eminent physiologist for the more full elucidation of this first question. I proceed to state such observations as appear to me to controvert the second, and to establish that view of this subject which I have myself been led to adopt.

It is obvious that, if vomiting were effected by a contraction of the diaphragm, it must be attended by inspiration. If this were the case, the fluids ejected from the stomach would be drawn into the larynx, and induce great irritation, events which are not observed. These events are, indeed.  

* Such was the opinion of the great Haller.
† Mémoire sur le Vomissement, par M. Majendie. A Paris, 1813.
effectually prevented by an accurate closure of the larynx, a fact observed in an actual experiment by M. Majendie, who makes the following observation:—“Dans le vomissement, au moment où les matières vomies traversent la pharynx, la glotte se ferme très-exactement.”* It is astonishing that this observation did not lead its acute author to see that under such circumstances, a contraction of the diaphragm, unless the thorax followed precisely pari passu, was impossible.

Complete vomiting has been observed, too, in cases in which the stomach had entirely passed through a wound of the diaphragm into the thorax, and in which it could not, consequently, be subjected to the action of that muscle.† In some experiments, vomiting was observed also to take place, although the diaphragm had been paralysed by a division of the phrenic nerves, or its influence subtracted by a division of its anterior attachments.‡

This view of the subject is still further confirmed by facts, which I now proceed to state, which prove that the act of vomiting is an effort, not of inspiration, but of expiration. This is obvious enough, indeed, on a mere observation of the state of the thorax and abdomen during vomiting. The larynx is evidently abruptly and forcibly closed, the thorax drawn downwards, and the abdomen inwards.

Such, indeed, appears to me to be the precise nature of the act of vomiting, in ordinary circumstances. The contents of the thorax and abdomen are subjected to the sudden and almost spasmodic contraction of all the muscles of expiration, the larynx being closed so that no air can escape from the chest, and the two cavities being made one by the floating or inert condition of the diaphragm. The mere mechanism of the act of vomiting differs little, therefore, from that of coughing, by which, indeed, the contents of the stomach are frequently expelled: the larynx in the former is, however, permanently,—in the latter, only momentarily closed; and there is, doubtless, a different condition of the cardiac orifice and of the oesophagus.

It appeared to me from these views of this subject, that if an opening were made into the trachea, or through the parietes of the thorax, the effort of expiration constituting the act of vomiting, would issue in expelling the air through these orifices respectively, and the evacuation of the stomach would be prevented; and I determined to submit the fact to the test of experiment. I took a little dog, made an ample opening into the windpipe, and gave a few grains of the sub-sulphate of mercury. The

† Such a case is mentioned by Wepfer. A similar one was also recently witnessed by Dr. Webster and Mr. Hunt. The whole of the stomach was found in the thorax, having passed through a wound of the diaphragm. There was repeated vomiting of a substance resembling coffee-grounds.
animal soon became sick. The first efforts to vomit induced a forcible expulsion of air through the orifice in the trachea. These efforts soon became very violent, however, and the stomach at length yielded a part of its contents. It was perfectly evident that the violent contractions of the abdominal muscles pressed upon the viscera of the abdomen so as to carry the diaphragm upwards to its fullest extent, and that at this moment vomiting was effected. The act of expiration was so forcible, that a lighted candle placed near the tracheal orifice was several times extinguished. In a second experiment, a free opening was made into the thorax between the sixth and seventh ribs of the right side. The lung collapsed partially only. During the first efforts to vomit, air was forcibly expelled through this orifice, the lung was brought almost into contact with it, the stomach was not evacuated. But as the efforts to vomit became extreme, a portion of lung was driven through the thoracic opening with violence and a sort of explosion, and at the same instant the stomach yielded its contents. These experiments appear to admit only of one explanation, of one conclusion,—that the act of vomiting is a forcible expiratory effort, the larynx being firmly closed, and the diaphragm perfectly inert.

It must be regarded as singular that M. Bourdon, by whom the action of the expiratory muscles, in their various "efforts," has been so well investigated,* should have adopted other views of the act of vomiting.

It is not intended to state that the act of vomiting is simply such as I have described. There are many facts which appear to show that the oesophagus is not without its share of influence in this act, and it is plain that the cardiac orifice must be freely opened; for mere pressure upon the viscera of the abdomen will not, in ordinary circumstances, evacuate the contents of the stomach. To effect this open state of the cardiac orifice, it is probably necessary that the diaphragm should, indeed, be in a relaxed rather than in a contracted state.

A singular and interesting fact was noticed by M. Majendie, of which he has not given any explanation. During the state of nausea which preceded the act of vomiting, in some of his experiments, air was drawn into the stomach. I am disposed to think that this effect was produced in the following manner: the larynx being closed preparatorily to the act of vomiting, an attempt at inspiration is made before the effort of expiration. In this attempt, air is drawn into the oesophagus, the larynx being impervious, and it is afterwards probably propelled along that canal into the stomach itself. It is not improbable too, that in some instances of vomiting, in which the action of the abdominal muscles was substracted,† a similar effort of inspiration has drawn substances from the stomach into the oeso-

* Recherches sur le Mécanisme de la Respiration, &c. Par Isid Bourdon. A Paris, 1820.
† Œuvres de Legallois, tom. ii. p. 105.
phagus, which has eventually expelled them by an inverted action. Neither of these phenomena could result from any action of the diaphragm, and much less from contraction of the abdominal muscles. But it is easy, by closing the larynx and attempting to inspire, to draw air into the œsophagus. A similar act, if very forcible, might draw a portion of the contents of the stomach through the cardiac orifice.

Such then appears to be the nature of the act of vomiting. How different is this act from one in which the diaphragm does, indeed, contract suddenly, under similar circumstances of closure of the larynx, viz. singultus: the action of the diaphragm being an effort of inspiration, air is apt to be drawn into the œsophagus with considerable noise; and there is occasionally pain, not only about the insertions of the diaphragm, but about the closed larynx.—*Brande's Quarterly Journal.*

**MORBID ANATOMY.**

*Instance of Obliteration of the Aorta opposite the Fourth Dorsal Vertebra.* By Professor Meckel.—A peasant, aged 35 years, previously in good health, robust, and well made, was all at once, on the 18th of January, seized with a sense of great debility, while carrying a sack of grain to market. He was carried to the hospital immediately. The symptoms of syncope and vertigo were dissipated in a few hours; to which succeeded gastric irritability, pain in the chest, total loss of appetite, bilious vomiting, the pulse remaining little altered. By the 6th day, the patient appeared to be completely cured—got up and was walking about, but suddenly fell down dead.

*Dissection.* On opening the thorax, the pericardium was observed to be filled with black blood, occasioned by rupture of the right auricle, which was softened in its structure. The aorta ascendens was found to be too much dilated for injection from that point—and, therefore, ligatures were thrown on the left subclavian and carotid arteries, while the tube was fixed in the arteria innominata. The injection was considered to be unsuccessful, and as the subject had been designed for a demonstration, it was thrown aside. On opening the abdomen afterwards, the vessels were seen injected, as were those of the lower extremities down to the feet. The examination being prosecuted, they found the aorta immediately below the arterial ligament, reduced to the size of a crow-quill, while a beautiful network of vessels were seen between the trunks, going off from the arch of the aorta, and the intercostals of the aorta descendens. The said intercostals were very much enlarged, and had produced grooves in the ribs. From this circumstance it was inferred, that the obliteration of the aorta was an affection of long standing, and could not possibly have dated from the late attack of syncope, six days previously. The man must, therefore, have not only survived the cause of the obliteration, whatever it was, but lived in good health for many years afterwards. On inquiry, all that could be learnt was, that this man had been very often ill in his youth; but afterwards had grown up strong and muscular.
Mr. Syme's Case.—When on the subject of obliteration of arteries, we may here notice a case recently published by Mr. Syme. An unhealthy man, aged 58, had been seized with mortification in the left leg, without any apparent cause, and where nothing but amputation appeared to present any chance of success. The limb was removed above the knee, and on examination, the popliteal artery was found firmly obstructed by a dense white coagulum, like that lining old aneurisms, and this obstruction continued all the way to its division into the peroneal and tibial arteries, which were also obstructed to the extent of an inch and a half from their origin, beyond which point they were healthy. The obstructed vessel seemed also to be somewhat contracted, particularly about the middle of the popliteal portion, where its coats were thickened. The vein was much thickened, so as to resemble an artery, but not obstructed. The man did well for some days, and half the stump was healed. But the breathing became oppressed, and he died. On dissection, the heart was found so soft and flabby, that the fingers could be easily pushed through its substance. The right internal iliac artery was firmly obstructed from its origin, as were the right and left internal iliac veins. Mr. Syme's opinion of the case is, that it was one of acute inflammation of the arteries, similar to the one recorded by Mr. Hodgson.—Med. Chir. Review.

Open Foramen Ovale in the Adult.—A young man, aged 18 years, was admitted into the Hardwicke Hospital, on the 6th Feb. 1827, as a fever patient, showing thoracic inflammation, with cough, difficult breathing, and bloody expectoration. By depletion he was rendered convalescent by the 14th, but on premature exposure to cold, he was seized with acute rhematism, which became ultimately translated to the chest, especially to the heart, where great distress was felt. The more acute symptoms were allayed by active depletion; but on the 27th Feb. we find the patient with pain in the region, severe cough with croupy sound—copious muco-purulent expectoration—great difficulty of breathing. He now stated that he had been subject for some years to pain in the left side, especially after running, or any active exertion. The pulse was rapid and irregular—countenance pale—feet oedematosus. "The stethoscope indicated acute bronchitis, with hypertrophy, and disordered action of the heart, the motions of that organ being tumultuous and irregular." He lingered till the 10th of March, when he expired.

Dissection. "The thoracic cavity was examined on the 12th. On opening it the lungs did not collapse, but the external appearance of this organ was healthy; the parenchymatous tissue exhibited some portions red, congested, and evidently inflamed; the bronchia vascular, and filled with a muco-purulent effusion.

"Pericardium contained about two ounces and a half of fluid, in which a considerable quantity of coagulable lymph was seen; inner surface of this membrane not inflamed, but that portion of it which is reflected over the heart showed marks of inflammation in several places; both ventricles
were much enlarged, exhibiting considerable hypertrophy; the semilunar aortic valves showed recent fleshy or cauliflower excrescences attached to all of them. Both the ventricles were quite filled with a dense, white coagulum, firmly attached to their parietes. The commencement of the aorta appeared unusually narrow, in proportion to the heart and to the subject; that of the pulmonary artery greatly enlarged. The auricles of the heart were also in a state of considerable dilatation: but the circumstances which attracted attention most, was, that the foramen ovale was open; but the manner of this opening must be more fully described. The septum between the auricles exhibited an oval depression, or attenuated space of about one-third of an inch in diameter, guarded only by a thin membrane; but at one side it was evidently pervious and open, with a rounded and thickened edge. This membrane acted like a curtain or valve; when viewed or pressed from the left auricle it was closed, the curtain or membrane pressing close, and overlapping the opening; viewed from the right auricular cavity, or touched with a probe, it opened and allowed a free passage, fully as large as a goose's quill, compressed so as to exhibit an elongated or oval section. The blow-pipe exhibited the same difference of a closed or open space, as it was used from the left or right side of the auricular septum."

Dr. Crampton enters into a long train of reflections on the consequences which must have resulted from this valvular opening between the two auricles of the heart, including the "dark unrenovated blood,"—the "tumult and distress felt in the heart and respiratory organs, &c." But we see no evidence of this unrenovated blood, before the last fatal illness—not even then; and as to the tumult and distress about the heart, we attribute them to the inflammation resulting from metastasis of acute rheumatism. Dr. Crampton tells us that in such a case as the above, there is only a part of the venous blood sent through the lungs for renovation, a portion going through the preternatural opening into the left auricle, "from whence it is prevented from returning by pressing back against, and closing the valvular curtain already described." We are much surprised at this reasoning. Does Dr. Crampton remember, that the two auricles act at the same instant, and not in succession? If the right auricle, indeed, acted while the left was passive, some blood might go through the valvular opening into the latter—and if the left acted subsequently, while the right was passive, the valve might still prevent the return. But there is no such thing. The two auricles act at the same instant, and both sides of the septum auriculorum are equally pressed, so that even when there is a wide and patent opening, there is very little intermixture of blood, where the heart otherwise preserves its relative proportions and capacities. It is where the strength of the one auricle predominates over that of the other, or where any obstruction to the natural issue of blood from an auricle takes place, that the foramen ovale produces the admixture in question. Thus, supposing there was a contraction of the opening between the left auricle and ventricle, such obstruction might cause some blood to pass through the
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foramen ovale, if it remained open. But in a natural and healthy condition of the chambers, we maintain, that such opening would produce little inconvenience, under ordinary states of the circulation. Such appears to have been the case in the above instance. There was no symptoms of blue disease—at least Dr. Crampton has recorded none. This explanation accounts for the occurrence of open foramen ovale, in people who had evinced no appearance of blue disease during life. In a postscript to this paper, Dr. C. appears to recognise the principle which we have stated—for after mentioning a patient, aged 34, who died in the hospital, and whose foramen ovale was found open, he says, the valve as in the other case, overlapped and protected the aperture, so that no blood was likely to pass, unless the contracting power of one side of the heart prevailed over that of the other. This is the view which we gave of the malformation in question, many years ago. The same reasoning applies to unnatural openings in the septum ventriculorum.—Med. Chir. Review.

PRACTICAL MEDICINE.

Case of Hydrophobia, treated with Superacetate of Lead. By Charles E. Jenkins.—William Thomas Hazlam, a fine young man, aged 22 years, residing at No. 8, Jones' building, Gower's-walk, White-chapel, by occupation a labourer, had complained for three months previous to his fatal malady, of heaviness in the head, weariness, and constant propensity to sleep, which he attributed to having caught cold.

On Saturday, November 4th, in the afternoon, he complained of being ill, refused to take his tea; and at thirty minutes past eleven o'clock, first discovered an inability to swallow fluids, which he ascribed to flatulence, which, meeting the descending liquid, would not allow it to pass into the stomach.

He continued getting worse in this respect until eleven A. M. November 5th, when I first saw him. I then found him dressed, sitting by the fire: he complained of wind in the stomach, and lamented his incapability of swallowing liquids. In reply to the question, whether he felt pain, he said, "I am in no pain whatever; I can eat a crust of bread as well as any one in the room, but I can't drink: my throat is not sore, and I don't know why I can't swallow." Pulse eighty; tongue furred, dry and parched; bowels regular; skin moist.

Two P. M.—Now the peculiar symptom, before only suspected, showed itself in all its characteristic intensity: on the instant of his attempting to take any liquid, to which he was constantly incited by the most tormenting thirst, a frightful convulsion of the whole body succeeded. He was now in bed, and had rolled the bedclothes round him, and girted them tight round his neck. The least breath of air, the undulation of the bedclothes (unless caused by himself,) or the slightest thing in motion, produced the utmost agony and terror.

Four P. M.—Being considerably worse, Dr. T. Davies of New Broad-
street was called in at the patient’s request, who recommended (the exhibition of liquid medicine being impossible,) a trial of the Plumbi Superacetum in substance, in doses of half a grain every half hour: this the patient managed pretty well, by placing the powder on his tongue himself, but he would not suffer any other person to attempt it for him; and even this simple method of receiving the medicine was followed on every occasion by a slight paroxysm, as soon as the powder touched his tongue.

Six P. M.—The disease greatly aggravated. Pulse 130; mouth still parched; thirst incessant, beyond any thing I ever witnessed before; he continually cried “Oh that I could drink quarts.” His countenance expressed fear and horror, combined sometimes with fury, at others with the saddest melancholy.

Nine P. M.—Found him sitting on the bed, supported by two attendants, of whose breathing on him he continually complained. He would not suffer the candle to approach him, or to be moved. The sight of a sheet of white paper distressed him exceedingly. A small mirror being shown him, threw him into strong convulsions: on his recovery, being questioned as to the cause of them, he replied, “Because my face looks so white, I can’t bear it.”

He had drilled his two attendants into a sort of military observance, and this was the order of it: they holding him under each arm, the one held a tea-spoon containing a little milk, which, when the patient gave the word “Now,” he endeavoured to throw into his mouth; but the moment it approached his lips, he threw himself backwards on the bed in the utmost agony of convolution, which lasted generally twenty seconds. A tranquil interval of ten seconds succeeded; then suddenly and furiously he would cry out “Ready!” which meant that they were to raise him up again. After a few seconds, in which he strained his courage to another dreadful effort, the word “Now” would be repeated, the spoon again approach his lips, and the convulsions as certainly follow. This process continued without intermission or variation until four o’clock. In one of his tranquil moments he said, “I don’t know what you think of it, but I call this killing work.”

Eleven P. M.—His mouth, which had throughout continued parched, began to discharge saliva in abundance, which he blew forth with convulsive energy. He showed a mischievous inclination to blow his saliva upon the persons present: this he would apologise for in his calm intervals, and with a bitter smile, would request them to “keep out of the way next time.”

A tendency to vomit, perhaps occasioned by the Plumbi Superacetum, disturbed him; spasmodic action of the abdominal muscles also frequently occurred.

It was a distressing operation to him to wipe off the saliva which col-
lected about his mouth, and annoyed him very much. After many fruitless attempts, he would pass his handkerchief over his lips with the rapidity of lightning, but the convulsions, ever at hand, still more swift, would at the slightest contact, inevitably follow.

A small portion of wine, not exceeding the third part of a tea-spoonful, having in the only felicitous attempt I witnessed, passed into his mouth, elicited from him loud exclamations of joy: "Oh! (said he,) how that drop of wine has comforted me! I shall be cured now; I feel myself a new man!" But this calm was of only three minutes' duration; and the longest interval he enjoyed was succeeded by a fearful exacerbation. Pulse 140, very small; body drenched in constant perspiration; face red and swollen.

This state of things continued, the paroxysms equally distinct and frequent, but weaker, until four o'clock, when all convulsions ceased, and he died about five o'clock, so easily that his attendants knew not the precise moment of his death.

A very strict inquiry was made by Dr. Davies and myself into all the circumstances of his life. His father and mother declared he had never been bitten by any animal during childhood; and he as strenuously denied it on his own part, and continued to do so until two hours before his death, when he confessed to his father that a dog kept by his master had, nine months before, bitten him in the instep, thigh, and hand. Being questioned as to the cause of his obstinate denial of the fact, he said, "If I had told those Doctors the truth, they would have caused me to be put to death."

This was not the language of unhinged reason, but a mere expression of a vulgar opinion, which obtains with some, that a hydrophobic patient may be with impunity destroyed.

During the whole progress of the disease, he felt no pain; his reason never deserted him; he had a craving appetite, but notwithstanding his assertion that he could eat a crust of bread, I never found that he could suffer any thing to pass his lips: his whole frame, like a highly charged electrical battery, required but a touch to be thrown into sudden and violent action.

Distant sounds did not affect him. In the room he would not allow conversation, though carried on in the lowest whisper. All white and shining bodies were held by him in utter abhorrence.

I have not been able to discover whether the dog had ever exhibited any rabid appearances: he is dead, having been starved by the neglect of the deceased, who had the charge of feeding him.

Examination of the body.—Externally: discovered a scar on the inner part of the left leg, corresponding with his statement to his father of one of the bites of the dog, across which branches of the saphena nerve extended themselves. The nerve presented no remarkable appearance.

Brain: Dura mater very adherent. Veins of the surface very much distended. More bloody points than usual in cutting the medullary sub-

Larynx and trachea red; fine vessels, in arborescent forms, extending down the latter; much light brown spumous serosity in the trachea.—Lungs and heart healthy.—Pharynx very red; redness suddenly ceasing at the commencement of the oesophagus, which latter presented a healthy appearance.

Stomach: Small quantity of fluid; arborescent redness, but not considerable, of the great cul de sac of the stomach.

All the intestines perfectly healthy.

Queries.—1st. May not the nerves be endued with a power of absorption?

2d. May not hydrophobia be produced by nervous absorption?

3d. May not the absorbent power be exceedingly slow, proceeding step by step until the morbidic matter arrives at the spinal marrow or brain, when the disease makes its appearance?

It is observed of painters, that after using the brush a considerable time, a portion of lead constantly insinuating itself between the handle of the brush and the hand, that they become paralytic; but two years of constant exercise in painting is, as I am informed, the earliest period at which that disease manifests itself. This, I submit, cannot be accounted for either by venous or lymphatic absorption.

4th. If the foregoing positions could be proved, would they not lead to this practical result, that after the bite of a rabid animal, dividing the nerve supplying the part bitten, by cutting off the communication with the nervous origin, would prevent the disease; and if the slowness of nervous absorption could be established, might it not, even a considerable time after the bite, by dividing the nerve some distance from and above the part bitten, be still attended by a corresponding beneficial effect?—Lond. Med. and Phys. Jour. July, 1828.

On Diseases of the Spleen.—An elaborate essay on diseases of the spleen, particularly the vascular engorgement of that organ common in Bengal, is contributed by Mr. Twining, which is followed up by an account of the native treatment of diseased spleen by Mr. H. H. Wilson. Mr. Twining is of opinion, that inflammation of the peritoneal coat, or of the substance of the spleen, is comparatively a rare disease in Bengal, since the evidences of it are not found on dissection.

"Among the morbid appearances which are most frequent, we observe, 1st. A soft enlargement, resembling a great clot of blood, wrapped in a thin membrane; this varies in colour from black to brown or blue; and when we attempt to lift the spleen, the fingers are thrust through the membrane, and the organ breaks down in the hands, becoming a putrid gore. 2d. Next in frequency, we find opacities of the peritoneal surface from lymphatic deposit, thrown out during superficial inflammation; or possibly
only the effect of repeated over-distension. 3d. Adhesions of the peritoneal coat of the spleen to contiguous viscera, which adhesions are by no means a general result of tumid spleen in Bengal. 4th. In a few old cases, we find a more indurated friable spleen, that breaks when handled without much force, like a piece of old moist cheese. 5th. And still more rare, is the cartilaginous lumpy hardness to which we give the name of scirrhus." Pp. 362, 363.

The other appearances more rarely observed are in persons long subject to agues,—an uniform pale white or milky colour of the peritoneal coat, which is more than usually tough and wrinkled, while the subject of the spleen is soft and flexible; and in those who are carried off by purging, after having long suffered from diseased spleen, numerous small ulcers are found on the internal membrane of the great intestines, while the peritoneal coat appears either quite healthy, or paler than usual.

We have premised the pathological changes to the symptomatology and etiology of the disease, because they serve as the foundation of all reasoning upon the subject, and discriminate the essential from the accidental phenomena.

Enlarged spleen is a frequent consequence of protracted intermittent and remittent fever, wherever these diseases occur. Great heat is not essential to the production of enlarged spleen. It occurs most frequently when the cold nights set in, after the termination of the rains, or just at the period when concentrated exhalation and considerable diurnal changes of temperature coexist.

"Vascular engorgement of the spleen is characterized by a pale, and often lurid or cadaverous countenance: the tunic albuginea of the eye has a pale blue or pearly appearance, similar to that observed in hectic patients; the skin is generally dry, and there is some morbid heat of surface, especially over the belly. There is tumour and tenderness in the region of the spleen, with tension of the epigastrium, which often extends across to both hypochondria. The patient suffers from thirst, though his tongue is generally clean and moist; sometimes it is of a pale and glossy hue, having its surface marked with deep fissures; more rarely it is of a morbid red colour. The stools are generally scanty and frequent, with tendency to constipation; urine pale and copious; the pulse is quick and occasionally hard; appetite indifferent, and digestion imperfect. The debility is greater than would be at first apprehended from observing the size and appearance of the patient.

"Agues frequently return while these symptoms remain, and the hot stage is protracted, and generally peculiarly distressing." p. 355.

"This febrile or irritative stage occurs less frequently than the simple congestion, in which the tumefaction of the spleen is not only greater, but more distinct, because there is less general elastic tension of the belly. There is less tenderness on pressing the spleen. With this condition of the local disease, we find that the pulse is low and weak, face of a pale and lurid colour, tongue clean and moist, skin cool, with a peculiar dry feel.
like a thin satin loosely laid over the soft cellular structure; there is an hectic eye, and pale urine, as in the irritative stage, but less of pyrexia. There is generally more appetite, but assimilation is imperfectly performed, and nutritious food does not restore the strength. Agues relapse more rarely than in the irritative condition, except at the lunar phases, or when the bowels become obstructed, and the cold stage is most distressing from great distension of the spleen." p. 356.

"Either the irritative or the congestive stages of disease before described are occasionally followed by the indolent tumid spleen, which is attended with little or no pain on pressing over that organ; while the spleen, though not exceedingly large, is often very hard, and its extent well defined. There is less appearance of debility, more appetite for food, and digestion is more perfectly performed than in the two foregoing forms of disease. In this indolent stage, there is often a dry cough, attended with pain in the left side of the chest, occasionally shooting to the centre of the scapula, or to the shoulder." p. 358.

In females, amenorrhea is an early attendant in most cases of tumid spleen. Mr. Twining lays great stress upon the influence of tumid spleen upon the function of respiration. He ascribes the black stools not to disordered bile, but to the secretion of carbon from the intestines, to compensate for insufficient decarbonization of the blood by the lungs and skin; and suggests as the subject of inquiry, how far the muscular debility and despondency may depend on the quantity of black or carbonized blood that is collected in the spleen, and thus detained in contact with the great solar plexus of nerves. But we think he goes too far when he attributes the taking away of the breath on descending into the cold bath, and the pains of side induced by violent exertion, to extension of the spleen.

The treatment generally found useful is a steady perseverance in a course of purgative medicines, combined with bitters and some preparation of iron, with a mild and rather abstemious diet. This will commonly succeed in the congestive form. The irritative state requires the application of leeches to the side, or sometimes venesection; and when the febrile symptoms are more than usually urgent, the cure proceeds more favourably when the patients were purged two or three days before the bitters and chalybeates were begun.

Mr. Twining is greatly adverse to the administration of mercury in cases of enlarged spleen; and even considers it very requisite to place some restriction on the habitual exhibition of calomel as a domestic remedy in every disposition of children, and more especially in the sequelae of protracted fever. The most obstinate and intractable cases of tumid spleen occurred in patients who had previously used mercury; and he strongly combats the opinion of those who consider that enlarged spleen should be treated in the same way as enlarged liver.

A peculiar state of the constitution accompanies the vascular enlargement of the spleen, which renders it unequal to bear the action of mercury without great hazard of inducing alarming debility and depression of vital
power, with tendency to sloughing of the lips, cheeks, and gums, which, when once commenced, generally terminates fatally. He is disposed, however, to think, that after subsidence of an enlarged spleen, when the symptoms of debility have ceased, and the functions of the skin have been restored, mercury may be used without danger.

Mr. Twining says he has given iodine a fair trial in six chronic cases of tumid spleen, and is satisfied that it is of no service in that disease.

The native treatment of a disease so common is worthy of consideration. Their general plan is to apply the actual cautery over the diseased spleen. The patient is ordered a low diet, with injunctions to take but little drink, and to eat no butter, milk, oil, or fat. A mixture of aloes, garlic, and vinegar is given daily, and about a grain of sulphate of iron with each dose. The quantity of aloes is regulated so as to produce three stools in twenty-four hours.—Edin. Med. and Sur. Journal.

Memorie sur le Ramollissement de l'Uterus. Memoir on Mollescence (Morbid Softening) of the Uterus. By S. G. Luroth, M.D. [Hosp. la Maternité.]—It is only of late years that Mollescence, or morbid softening of the living structures, was discovered to be one of the most important, and unfortunately, one of the most common structural lesions to which the human frame is subject. The brain, the lungs, the spinal marrow, the nerves, the muscles, the bones, the heart, and other parts, have been found in this pathological condition, and have been the subjects of accurate investigation. The uterus is the organ to which we are now to direct our attention.

The mollescence of the womb is more frequently partial than general. It more commonly occupies the internal surface, and the cervix—though occasionally it is found penetrating through the entire substance of the organ. The mollescence presents several degrees, blending insensibly into each other. In the first degree, the parts are simply softened or very flaccid, generally with serous, or sero-sanguineous infiltration into the interstices. An example of this kind was observed by our author in the Hospice de la Maternité, in the month of March 1827. A young and strong female had been carried off by puerperal fever, a few days after delivery. On dissection, not only the uterus, which had a large empty bag, but all the other organs, especially those of a muscular structure, as the heart, were in a state of extreme flaccidity. The tissue of the uterus was infiltrated with serosity, and very lacerable. Internally it was lined with a dark-coloured viscid coating, exhaling a putrid odour. The ovaria were softened, flaccid, and infiltrated. The heart was in a similar condition. There are not wanting examples of this kind in works on puerperal fever.

In the second degree, the structure of the uterus is still farther altered. It will scarcely bear handling without reduction into a pultaceous mass. The following is an example observed at the Hospice de la Maternité, under the care of Professor Deneux.

A female, aged 27 years, of good constitution and previously healthy,
was safely delivered of her second child, 4th April, 1827, after a labour of seven hours. She complained of a pain in her side the same day, and was bled, both generally and locally; but some symptoms of pulmonic affection continued till the 17th of the same month, when she complained, for the first time, of burning heat in her throat. The night was passed in great agitation, and on the following day, the tongue was observed to be swelled, and an erysipelatous eruption covered the neck and shoulders. As there were some signs of gastric derangement, an emetic was prescribed, and an oily purgative. On the 19th the patient complained of great general debility, but no local pain. Having exposed herself to cold by throwing off the bed-clothes, the erysipelas disappeared rather suddenly, and was succeeded by diarrhoea, urgent thirst, and cough. 22d. Cephalalgia was added. 23d and 24th. Showed symptoms of low fever; but without any pain or tenderness of the abdomen. She lingered till the 26th, when she expired, never having complained of pain in the abdomen or the uterine region.

Dissection. The arachnoid was opake—many red points in the brain when sliced—no effusion in the ventricles. There was some yellowish serum on the thoracic cavities—lungs sound—heart flaccid. There was some yellowish effusion in the peritoneal cavity, but the peritoneum itself was healthy. The mucous membrane of the cæcum and colon was intensely inflamed; liver enlarged and softened; the uterus was so soft that it would scarcely bear handling, especially its anterior parietes.

In two cases of puerperal fever, our author observed a similar mollescence of the uterus; and cases are quoted from Lippich and Nauman, showing the same conditions.

In the third degree of uterine mollescence, the disorganization amounts to almost a liquefaction, or reduction of the viscus to an inorganic pulp. Generally, this state is only partial—life not continuing till the whole organ is so changed, especially in acute cases. For the most part, the stomach, heart, or other viscera, partake in these mollescences. The tissue thus softened, sometimes preserves its natural colour; at other times it is pale. The parietes of the uterus are more frequently in a state of atrophy than hypertrophy, when they are morbidly softened.

The symptoms of this uterine mollescence are very vague, and but little known, especially those attendant on the invasion of the disease. A sense of weight, or constraint in the pelvis; dull pain in the hypogastrium, augmented by pressure; uterine haemorrhage; suppression of the lochia (if in the period of accouchement); febrile exacerbations, &c. are the usual accompaniments of this disease; together with a remarkable prostration of the mental and physical powers, and a presentiment, on the part of the patient, that death will ensue. Our author thinks, and the conjecture is rational, that if this disease be going on during utero-gestation, there will be slow and laborious parturition, with probability of a dead fetus, uterine haemorrhage, and other accidents attendant on bad labours. It is also not improbable, that mollescence of a portion of uterus may be very accessory.
to that dreadful occurrence, laceration of the organ. This last supposition, indeed, is nearly converted into a certainty, by the cases of ruptured uterus put upon record by various authors. The rupture of other organs also, as the heart and stomach, in cases of mollescence of these parietes, is favourable to this supposition.

The progress of mollescence of the uterus is sometimes acute, sometimes chronic. The duration, of course, is very various. It may continue for many years if the affection be partial, and if nothing occurs to hurry forward the disease. Without being able to say anything decisive as to its comparative frequency, our author thinks that it is a malady by no means very rare. The proximate cause is doubtful—it is not always the same. The mollescence is sometimes a primitive affection—sometimes the effect of other diseases, as of inflammation. In the first instance, it may be owing to a kind of defective nutrition—in short, it may be a kind of atrophy of the organ, unaccompanied by any super-irritation or excitation. There is little doubt, however, that this mode of production is infinitely more rare than that which results from inflammatory action in the part, acute or chronic. Our author is also of opinion, that there is another cause for this mollescence of the uterus, and that is, a putrid or depraved state of the blood itself. Many cases which occurred to him at the Maternity, are in support of this doctrine; but at present, he declines entering farther on this path of investigation.

The prognosis is unfavourable; but more or less so, according to the degree of intensity, and extent of the disease. The diagnosis is very difficult, and must be gathered if possible, from the few symptoms already described. In most cases, the disease is only recognised after death. This, however, was the case in many other diseases now well known by living indications, but formerly undistinguishable from want of investigation. The same observations will apply, no doubt, to the treatment. It must be purely symptomatical—that is, the actual phenomena present must be attended to, and combated if practicable. In some cases the disease, when situated about the os, or cervix uteri, can be recognised by manual examination. It is then for us to determine by the existing symptoms, whether it is of an inflammatory nature, or the effect of atrophy, and act accordingly.—Med. Chir. Review.

CHEMISTRY.

On the agency of Carbonic Acid in the Decomposition of Water by the contact of Iron.—The last number of Brande's Journal, (No. 6, New Series,) contains an article on this subject by Dr. Marshall Hall. The object of the paper is to prove, that water does not undergo decomposition at an ordinary temperature by the contact of iron, when both are perfectly pure; and that in every case in which water is apparently decomposed by iron, there is necessarily the agency of carbonic acid. In order to establish these positions, the following experiments and observations are detailed.
The bulb of a retort was filled with small portions of iron, and the interstices between them, together with the greater part of the tube of the retort, were then occupied with freshly-boiled distilled water, while a small portion of olive oil was poured into the tube to exclude the atmospheric air. The retort was then placed in an inverted position, and so remained a long time before any chemical change was observed. At length bubbles of gas were seen to ascend to the upper part of the bulb of the inverted retort, and the pieces of iron became tarnished. This effect was observed to take place sooner in a similar experiment in which no oil was poured into the retort, and from which the atmosphere was consequently not excluded.

As these results were supposed to be modified by the influence of a minute quantity of carbonic acid retained by the boiled water in the first experiment, and by a larger quantity absorbed from the atmosphere in the second; in order to neutralize entirely the effect of this substance, a small lump of lime was dropped into the retort without oil. From this moment the evolution of gas entirely ceased, although it had been previously proceeding for many days uninterruptedly.

To determine the agency of the gas still more distinctly, a quantity of iron was first placed in contact with lime-water, and also with water and lime-water mixed in the proportion of four-fifths of the former to one-fifth of the latter. There was not, in either case, after the lapse of a long time, any oxidation of the iron or evolution of gas.

In another experiment the iron was placed in water in which some freshly-calcined magnesia had been mixed. In this case, as in the former, no chemical changes took place.

These experiments were afterwards contrasted by one in which the iron was placed in water impregnated with carbonic acid gas. Here there was a speedy and rapid disengagement of gas, which was proved to be hydrogen by being exploded with a mixture of atmospheric air. A small portion of lime being dropped into the retort, the disengagement of gas immediately ceased.

In some of the experiments in which the greatest pains had been taken to expel the air from the water by long boiling, and to exclude it afterwards, several months elapsed before the slightest evolution of hydrogen was observed; but this eventually took place in all cases in which carbonic acid was not entirely absorbed by an alkaline earth.

It has long been known, that when pure iron is placed in contact with distilled water, which has been freed as much as possible from its gases by long boiling, the decomposition of the water is effected with extreme slowness; indeed, so tardily is this effect produced, that M. Thenard has suggested that it may be an effect of the chemical agency of light. The same author has also suggested, that the decomposition of water by iron may, in some instances, be connected with the evolution of a galvanic action, excited by a circle formed by the iron, a portion of the oxide and the
water. M. Guibourt concludes from a series of experiments made by himself, that iron does not decompose water when in a small proportion to the fluid, but that a decomposition is effected when the relative quantity of the metal is greater.

Such are the views which have been entertained on the subject; but "no person," says Dr. Hall, "appears to have suspected the necessity for the superadded agency of the carbonic acid. That this phenomenon is not dependent upon the agency of light, is proved by the fact of its being totally prevented by the addition of a small quantity of lime-water, or of calcined magnesia. And that it is not an effect of galvanism, is proved by its being prevented or immediately arrested by the same means. It is equally certain, from the same facts, that the relatively large quantity of the metal has no influence upon the result; this is further obvious, from the fact that the water is decomposed, however small the quantity of iron, if carbonic acid be present. In the experiments of M. Guibourts, it is obvious that the carbonic acid was not totally excluded, as it is impossible to deprive water entirely of this gas by the longest boiling."

The experiments here detailed were all made at the ordinary temperature of the atmosphere, at every season, and some of them remained for repeated observation during a year and a half.

In the conclusion, it is suggested that the principles elucidated in this paper, may possibly be useful in the arts, and especially as they may furnish the proper method of preserving polished iron goods free from tarnish or rust, since this object would be effectually attained by covering their surfaces with lime mixed with water.

MEDICAL JURISPRUDENCE.

Employment of Iodine and Bromine as tests of the vegetable Alkalies.—M. Donné lately presented to the French Academy of Sciences, a memoir on this subject, which was referred to Chevreul and D'Arcet. They reported, that the anticipations of the author which extended to the certainty of these respective bodies being unequivocal and distinctive tests of vegetable alkalies, had not been sufficiently verified by experiments. They however applaud his industry, and in consideration of the novelty of the subject, recommend a continuance of his labours. We find it mentioned in the last No. of the North American Medical and Surgical Journal, that on the application of iodine and bromine in vapour to the vegetable alkalies, distinctive colours, consisting of various tints of yellow, red, and violet, are developed.
1. **Chemical Table, exhibiting the Elementary Substances, their forms, combinations, prime equivalents, and combining quantities.** By James Hadley, M.D. Professor of Chemistry in the College of Physicians, and Surgeons of the Western District.

A large sheet bearing this title has recently been published by Professor Hadley, and it will, in our opinion, be a highly useful one to the chemical student. From the following explanation attached to the table by the author, our readers will be able to form an idea of the amount of information which it contains, and of the manner in which this information is conveyed.

"The simple substances are arranged in the left hand column, beginning at the top with oxygen, and ending with yttrium. To the right hand of any individual substance in this column are the compounds formed by that substance, and those which precede it in the order of arrangement. The simple substances, and their combining quantities, are known in the compounds by the colours which represent them in the left hand column. Where the colours are not separated by a line, the combining quantities are not determined. ☐ Denotes a gas; ☜ a liquid. The figures in the upper part of a space representing a body, if it be a solid or liquid, show its specific gravity. If it be a gas, they show the weight of 100 cubic inches in grains. The figures on the lower line of a space express the prime equivalents of the simples, their combining quantities, and the representative numbers of the compounds."

The ingenuity displayed in the construction of this table, is fully equalled by the neatness and beauty of its mechanical execution.

2. **The Transylvania Journal of Medicine and the Associate Sciences. Edited by John Esten Cooke, M.D. Professor of the Theory and Practice of Medicine; and Charles Wilkins Short, M.D. Professor of Materia Medica and Medical Botany in Transylvania University. Nos. 1, 2, 3, for February, May, and August, 1828. Lexington, (Kentucky) 1828.**

We have perused the numbers of this Journal with pleasure and profit; and we rejoice that the physicians of the south-west are uniting their efforts in the present laudable undertaking. Among the valuable papers may be particularly specified those of Professor Dudley on Injuries of the Head, and on Hydrocele—and various articles on the epidemic and endemic diseases of that part of America, by Professor Cooke and Drs. Yandell, Harrison, and Travis. Phrenology meets with a favourable reception, and the writings of its leading advocate (Professor Caldwell) are analyzed and commended.

It is to be regretted that the courtesy due to an infant Journal should have been at all overlooked. From a sheet accompanying the last number, we observe that it has not been unnoticed. A proper reproof is administered.

The following advertisement is prefixed to this publication.

"The Albany Institute is composed of two Societies, which for various periods of time have existed in this city—the Society for the Promotion of Useful Arts in the State of New-York, and the Albany Lyceum of Natural History. Circumstances not necessary to be explained, led to an union of effort and property between their members and other citizens, and as a necessary consequence, to an enlargement of the objects of investigation. The present title of the association was adopted, under the idea that it would comprise the pursuit, both of science and literature in their most extensive sense.

"It has been deemed advisable to commence the publication of some of the papers read before the society. The members do not flatter themselves that they will greatly add to the general stock of knowledge—they may hope however, that their efforts will tend to disseminate a taste for it."


4. Some account of the origin, objects, and present state of the Pennsylvania Hospital. By William G. Malin, Clerk and Librarian of the Hospital. Philadelphia. 12mo. 1828. pp. 24. (From the Author.)

This pamphlet is particularly interesting from its containing an authentic account of the insane patients treated in the Pennsylvania Hospital. Out of 25,071, admitted since its opening on the 11th of February 1752, 3487 have been cases of insanity. "Of these about 240 are designated as caused by intemperance." We extract the following table from page 13.

Cases of Insanity from Feb. 11, 1752, to April 26, 1828.

The following Table, the result of a very careful examination of the Hospital records, exhibits the number of Insane patients of each sex, together with the proportion cured, relieved, &c.

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Cured</th>
<th>Relieved</th>
<th>Removed by Friends</th>
<th>Elopeed</th>
<th>Died</th>
<th>Remain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>2418</td>
<td>910</td>
<td>452</td>
<td>444</td>
<td>188</td>
<td>364</td>
<td>60</td>
</tr>
<tr>
<td>Females</td>
<td>1069</td>
<td>344</td>
<td>250</td>
<td>224</td>
<td>42</td>
<td>162</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>3487</td>
<td>1254</td>
<td>702</td>
<td>668</td>
<td>230</td>
<td>526</td>
<td>107</td>
</tr>
</tbody>
</table>
"A large proportion of the deaths have been from old age or diseases having no necessary connection with insanity.

"The number of insane persons in the house is generally about one hundred and ten."


6. The Western Journal of the Medical and Physical Sciences. Edited by Daniel Drake, M.D. late Professor of the Theory and Practice of Medicine in Transylvania University, &c. 3 Nos. for April, May, and June 1828.

The publication of this Journal is another evidence of the growing spirit and enterprise of our western professional brethren. It is conducted with much ability by an Editor who has long since established a high character for talent and erudition. We hope it may have a long and prosperous career.

INTELLIGENCE.

UNIVERSITY OF THE STATE OF NEW-YORK.

College of Physicians and Surgeons, New-York, Aug. 11th, 1828.—The twenty-second session of the College will commence on the first Monday of November next, after which the several courses of Instruction will be continued by the respective Professors, viz.

John Augustine Smith, M.D. on Anatomy and Physiology.
Alexander H. Stevens, M.D. on the Principles and Practice of Surgery.
Edward Delafield, M.D. on Obstetrics and the Diseases of Women and Children.
John B. Beck, M.D. on Materia Medica and Medical Jurisprudence.
John Torrey, M.D. on Chemistry and Botany.

At extra hours, and without additional expense to the student, lectures will be delivered on Medical Jurisprudence and Botany, by the Professors of those sciences.
In the various departments of the College, every facility is afforded for the acquisition of professional knowledge.

The Anatomical Museum, heretofore one of the most extensive in the country, has become recently still farther enlarged by the addition of private collections and new preparations; the specimens of Morbid Anatomy particularly, are daily increasing. In practical Anatomy the opportunities will be commensurate with the utmost wishes of the student.

In the Obstetrical Department cases will be furnished as heretofore to such students as may desire them, to be attended under the direction of the Professor of that branch.

The Dissecting-room will be open during the day and evening, under the direction of the Professor of Anatomy.

By permission of the Directors of the New-York Eye Infirmary, all the students of the College will be entitled, during the lectures, to gratuitous admission to that institution.

The Trustees cannot omit this opportunity of reiterating their obligations to the Regents of the University and to the Legislature, for the continued care which they have manifested for the science of medicine in general, and for the medical institutions of this state in particular. During the last year, the latter body passed the statute which will be found below. It is now published for the information of medical students, who will observe that the only legitimate medical institutions in the state, are those which are connected with the University, and that no degrees granted in this state are valid licenses to practice medicine and surgery, except those emanating from the Regents of the University.

By order of the Board of Trustees,


NICOLL H. DERING, M.D. Registrar.

Sec. 21. The degree of Doctor of Medicine conferred by any College in this state, shall not be a license to practice physic and surgery; nor shall any College have or institute a Medical Faculty to teach the science of medicine in any other place than where the charter locates the College.

University of the State of New-York.—The Regents of the University have conferred the degree of Doctor of Medicine on the following gentlemen, on the nomination of the State Medical Society.

Dr. Thomas Brodhead, of Columbia county.

Dr. John D. Henry, of Monroe County.

Dr. Eleazer Gedney, of Orange county.

The University of London has announced its opening for the session of 1828–9. No less than twenty-two Professors are appointed, and several vacant chairs are still to be supplied. The Professors in Medicine and its adjunct sciences are as follow:
Anatomy, Granville Sharpe Pattison, Esq.
Dissections and Demonstrations, James R. Bennet, Esq.
Physiology, Charles Bell, Esq.
Comparative Anatomy and Zoology, Robert E. Grant, M.D.
Nature and Treatment of Diseases, John Conolly, M.D.
Midwifery, David D. Davis, M.D.
Materia Medica and Pharmacy, Anthony Todd Thomson, M.D.
Chemistry, Edward Turner, M.D.
Botany, John Lindley, F.R.S.

Still vacant, Surgery, and Mineralogy, and Geology.
Dr. Watson of the Middlesex Hospital, lectures on Clinical Medicine, and Mr. Charles Bell on Clinical Surgery.

Flora of Java and the adjacent Isles. Extract of a letter to Jeremiah Van Renselaer, M.D., dated Bruxelles, June 12, 1828.—Although the Indian Archipelago has been for ages the field of research for European naturalists, and particularly for those of Holland, whose colonies occupy so large a part of that vast district, it is not to be denied that its natural history in general, and its botany in particular, is still but imperfectly understood. This should be in a great measure attributed to those difficulties, almost insurmountable, which the pernicious influence of the climate opposes to those naturalists who have endeavoured to penetrate into the interior of Java, and to the neighbouring islands. The encouragement held out by government to scientific researches has, in a measure, been frustrated by the diseases incident to the climate.

The labours of Rheede and Rumph, under the patronage of the old East India Company, have been fully seen and appreciated in the publication of their magnificent works. More lately, Noronha of Spain, Thunberg of Sweden, De la Tour of France, and Horsefield of America, have successfully laboured in science, during their residence in Java, under protection of the Dutch government. Few scientific expeditions have been so happily conceived, or so wisely instructed, as that on which the King of Holland, some years ago, sent Messr. Reinwardt, Kuhl, and Van Hasselt. Unhappily the sea engulfed the most rich and precious collections formed by the expedition: two of the naturalists composing it, Kuhl and Van Hasselt sunk in the midst of their labours, and Reinwardt was forced by the loss of health too soon to renounce his useful researches.

All these disasters did not deter Dr. Blume, who was chief of the medical department in the East Indies. He has devoted to the Flora of those countries all the moments which he could spare from important and multifarious occupations. By long perseverance and at great expense, he has formed an Herbarium, consisting of about three thousand species, mostly from Java, and he has published a list of them in India. He was not less susceptible than others to the insalubrity of the climate; and since the loss of health forced him to return to his home, he has employed himself in
classifying his specimens and in arranging his new genera and species. He has the assistance of Dr. Fischer in preparing his work for the press; and will embody the discoveries of Reinwardt, Kuhl, and Van Hasselt, which will render the work more complete. Drs. Blume and Fischer intend to make it similar, in all respects, to Humboldt et Bonpland's "Plantes Equinoxiales." I must not forget to say that it is written in Latin: its publication will form an epoch in the history of Botany.

Writ for the Medical Convention of 1830.—Whereas the Convention that was held at the city of Washington, in the month of January 1820, for forming a Pharmacopœia for our United States of America, did resolve that the President of that Convention should, on the 1st day of January 1828, issue writs of election to the several incorporated State Medical Societies in the northern, middle, southern, and western districts of the nation, requiring them to ballot for three delegates to a General Convention, to be held at Washington, on the 1st day of January 1830, for the purpose of revising the American Pharmacopœia; and whereas the several institutions as aforesaid, are by the same authority, requested to forward to the President, on or before the first day of April 1829, the names of the three persons so chosen; with sundry other provisions contained in the historical introduction to the work, to which the reader is referred.

Now therefore, I, Samuel L. Mitchill, by virtue of the power vested in me by the Convention of 1820, do hereby give notice to all the incorporated Medical Societies, Colleges of Physicians and Surgeons, Medical Schools, and Faculties of Universities and Colleges, and all other authorized Bodies, that they choose proper persons to represent them in the General Convention to be held in January 1830, for revising the Pharmacopœia.

Given under my hand, this first day of January, 1828, at the city of New-York.

Samuel L. Mitchill, President.
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