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"Je prends le bien où je le trouve."

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ARTICLE XXVIII.

Creosote in Dysentery, with Cases. By William H. McMath, M.D., of Lewisville, Lafayette County, Arkansas.

Having for the last two years been witnessing the effects of Creosote in Dysentery, I feel that I should be recreant to my responsible trust as a physician, did I not make the same public through the pages of some medical journal, to the profession generally. Hence, I send this article to the Southern Medical and Surgical Journal. Whether this remedy will prove to be as valuable as my experience seems to indicate, remains yet to be proved; and it is with the view to elicit such evidence, that I make this publication. This is the formula that I am in the habit of using:

B.

- Creosote, gttæ. x.
- Acetic acid, " xx.
- Morphia sulph., grs. ii.
- Water, pure or distilled, i.

Of the above mixture, I am in the habit of giving to an adult, a teaspoonful every two or three hours, until it checks the blood and mucus in the evacuations from the bowels. It is sometimes the case, in a very irritable state of the bowels, that yellow, green or dark serous evacuations will continue after the blood and mucus have been checked, which the creosote appears not to be so effectu-
al in checking, as anodynes and astringents; though, in nine out of ten cases, it will check and completely hold at bay, the discharges of every character from the bowels in this disease.

Furthermore, I will state, that in my hands, I find it to be perfectly admissible in every case. It matters not to what extent the febrile excitement may be raging, or how low the nervous system may be depressed, it is the same in its mission, perfectly safe and admissible at any and every stage of the disease, and has, in my hands, as certainly cured dysentery, when properly combined with other agents—as quinine has cured periodic diseases. I admit that there are collateral agents necessary, in some protracted cases, to effect a radical cure. I can at least claim for this agent, that it will hold the drain in complete abeyance until the necessary auxiliaries can be brought into action, and completely eradicate every trace of the disease from the system: this it will certainly do. In mild cases, I have found it necessary, only to give a few doses of the above prescription to produce a cure.

That I may be better understood, I will record a few cases whilst under treatment.

June 11th. Called to see Mr. F., aged 20 years, of plethoric habit. He informed me that he was attacked during the night with flux. For the last eight hours, he has had ten or fifteen evacuations from the bowels of clear blood, with a little mucus floating therein. Skin hot and dry; tongue dry, with a brown coating, red around the tip and edges; pulse 120; very tender on pressure over the bowels.

Treatment.—Calomel and Dover's powder, broken doses, alternated with creosote mixture, every two or three hours; warm poultices to the bowels.

June 12th. Sent for in haste; found patient with extremities cold; pulse scarcely perceptible at the wrist; had frequent bloody actions during the night, and much nausea; torment excruciating, tenesmus constant and harrassing.

Treatment.—Sinapisms to the extremities and stomach, and wine and whey. Prescribed one teaspoonful of creosote mixture every three hours.

13th. Tongue still furred and dry, red around the edges and tip; great thirst; pulse 110—skin hot and dry. Had from the bowels three actions only. Directed the creosote to be continued, and blue pill at 8 o'clock at night.
14th. Patient rested well last night; has had two or three bilious evacuations during the night. All symptoms much improved. Directed the creosote to be continued. From this time on, the patient continued steadily to improve, and recovered with no other medicine, save creosote and tonics. I would here state that the above patient had been for two weeks frequently annoyed with diarrhoea, irregular fevers, etc.

Case II.—June 12th. Called to see Miss R., attacked on the 11th, with dysentery; frequent small bloody and mucous evacuations, with a great deal of torrmina and tenesmus; tongue coated, red around the edges and tip; pulse 110 in a minute; pain in the head—had taken castor oil.

Treatment.—Calomel and Dover's powder, in broken doses; warm poultices to the bowels; injection, starch and laudanum.

13th. Symptoms the same; skin hot and dry. Mercury continued; injections of nitrate of silver in solution.

14th, 7 o'clock, A.M. Pulse 120; great thirst; skin hot and dry; great deal of tenderness over the bowels; frequent bloody and mucous evacuations; tongue red around the tip and edges; fur adherent; some nausea and occasional vomiting.

Treatment.—Hydrag. cum creta and opium; blister to the bowels, sinapism to the stomach, and starch water injections.

5 o'clock, P.M. Found patient almost with continued vomiting; evacuations, pure blood. 100 drops of laudanum in starch water; commencing half an hour afterward giving a teaspoonful of the creosote mixture every two or three hours, until the bloody evacuations ceased.

15th, 7 o'clock, A.M. Patient appears more cheerful; rested well during the latter part of the night; only five evacuations from the bowels since last visit; complains this morning of pain in the right shoulder; eyes yellow, tongue dry, pulse 115.

Treatment.—Mercury in alterative doses, alternated with the creosote mixture every three hours, with a large blister over the hepatic region.

16th. Skin still hot and dry; has had during the night only three evacuations from the bowels, of blood and mucus; very thirsty, bowels tender, pulse weak, 120, and pain in the head and shoulders. Blister drew well; dressed blister with mercurial ointment. Gave calomel and creosote mixture.

17th. Patient rested well during the night; has had no evacu-
ation from the bowels in six hours; a good deal of tormina and sickness of the stomach. Prescribed effervescent draught.

8 o'clock, P.M. Has had but one small action of blood and mucus; a good deal of tenesmus; patient very restless. Prescribed oil, laudanum, and spirits turpentine.

18th, 7 o'clock, A.M. Tongue more moist, pulse 110; has had four fecal actions, with some bile; rested well during the night; bowels still tender on pressure.

_Treatment._—Calomel, opium and ipecac in alterative doses.

19th, 7 o'clock, A.M. Pulse 95; has had no action from the bowels during night. Treatment continued.

5 o'clock, P.M. Has had no action still. Prescribed castor oil, spirits turpentine and laudanum.

20th. Patient this morning appears much improved, has had during the night some three or four dark bilious evacuations.

21st, 8 o'clock, A.M. Patient since last visit has had one action from the bowels only, and that of a dark bilious character. Other symptoms all much improved; patient quite emaciated and very feeble; tongue moist and cleaning; appetite returning rapidly. Prescribed elixir vitriol 15 drops, three times a day.

24th, 6 o'clock, P.M. Having been absent since the above date, on my return I was called in great haste to my patient. Found her with extremities cold, no perceptible pulse at the wrist; face blanched. Patient very restless; profuse cold, clammy sweat. Patient complains of blindness. On inquiry, on the first day after my absence, I learned that the dysenteric actions had returned, after having been checked with the creosote mixture. Immediately from that time to the present date, the discharges had been of a healthy character and not too frequent. Furthermore, I ascertained that my patient had been afflicted with menorrhagia for several months prior to her sickness. During the last thirty-six hours she had been suffering, to a frightful extent, with uterine hemorrhage, and for twelve hours prior to my visit, cold applications to the bowels had been used, without benefit. Sinapisms to the extremities, acetate of lead and opium had been given interally, without benefit. Ergot was given also without any good result.

12 o'clock, P.M. Patient no better. Consultation requested. Dr. J. R. Wilder was called in, who directed the use of sulphate of bebeberine in five grain doses, every two hours, with stimulants—which checked the hemorrhage in a short time.
25th, 10 o'clock, A.M. Found patient very much improved, reaction fully established, and hemorrhage entirely ceased.

Nothing further worthy of note occurred in this case. This patient, after a very protracted convalescence, recovered entirely.

During the last three years, dysentery or flux has prevailed on Red River to an alarming extent. As regards the treatment, there is less unanimity of sentiment than in any other disease we have to contend with. Standing foremost among the remedies generally used, may be ranked mercury. Used too as this article has been, by every member of the profession, from the merest quack to the most exalted genius, there is, nevertheless, a humiliating deficiency in our knowledge of its utility in diseases generally, and this disease in particular, that seems almost unpardonable. While some practitioners inculcate the propriety of giving and relying upon it, with a degree of enthusiasm bordering almost upon the belief that it is a specific, others, there are, who withhold it entirely, and look upon its use in any stage of the disease as very injurious. Now, that this should be the case, after so much research into the nature of this disease, and so much experience as regards the most successful plan of treatment, is certainly very strange. In most other disorders the profession, by general consent, have agreed either upon the indications this agent is calculated to fulfil, or upon the particular circumstances regulating its employment, but in flux or dysentery we have opinions, recorded and unrecorded, both for and against it. But this is not all: these practitioners, alike, when called upon to sustain their positions, forestal all opposition to their views, by appealing for evidence to the success of their modes of treatment. In all of this there is something wrong, and the truth to some extent lies between the extremes. Among the majority of practitioners in dysentery there is a concurrence of opinion, especially on Red River, that the liver, in a large number of cases, is involved; this being the case, mercury, in many cases, is indispensably necessary. This remedy, if we have any clear conception of its effects, cannot act otherwise than beneficially, applied as these remarks are intended to be, to cases, where there is evidently considerable derangement of the liver.

As the disease frequently commences with discharges of pure blood, many physicians extol the use of the lancet; those who have adopted this practice have been very unsuccessful. This,
with the saline practice, has been extensively used in this section of country. We will not say that patients being treated in this manner, in some cases, do not often recover with apparent facility. We know that in some cases there is a great tolerance of the loss of blood; but the use of the lancet in nine cases out of twelve, to make an antiphlogistic impression on the system, or to attempt to prevent or subdue an inflammation of the bowels, by the use of salines, we think to be of very doubtful propriety, and we are fully satisfied from observation, a very unsuccessful practice. I am fully of the opinion they would do better without any medication whatever. We can see no more propriety in the hemorrhage from the orifice of a lancet, than from the mucus membrane of the bowels. If one is prejudicial, so must be the other, and I do not believe that the position is at all strengthened by appealing to the fact, that in the one case the blood is abstracted in the commencement, in the other, after the disease is fully established; for, if the presence of blood is necessary to keep up and maintain the vital resistance against the encroachments of the malady, it must, therefore, be kept in view as the ultimate and most powerful cause of vital resistance, which if ever of any importance, is certainly so in this disease, in which, throughout its whole course, the vital resistance of the system is primarily impaired.

Concerning the availability of stimulants in this disease, there is a great difference of opinion. We have steamers in an abundance who use pepper, number six, brandy, red oak bark, &c. Some of our most intelligent practitioners use brandy, opium and camphor throughout the whole disease. Our own views, together with what we have gathered from experience, induce us to favor the stimulant more, at any rate, than the contra-stimulant plans of treatment; they are generally, to say the least of them, productive of little good; we are compelled sometimes to hold up the system of a debilitated patient with stimulants, while we unloose the fangs of an inflammation in some vital organ; but it is very probable that the good and bad effects of such a plan are pretty equally balanced.

Of the value of blisters we are, from extensive use, well convinced.

There is still another course of treatment that has many advocates, which consists in the use of Ipecac throughout the disease. In the commencement of the attack—the period of incubation—
this medicine given in doses sufficiently large to produce emesis, will in some cases break up the train of morbid symptoms, and make such an impression on the system as will entirely subvert all diseased action; to this stage of the disease the usefulness of this agent is mostly confined. I do not think it will do to rely on, as I have frequently seen great injury result from its indiscriminate use.

To explain the modus operandi of creosote in dysentery, I shall not attempt. Suffice it to say, that during the present year, I have used it in over a hundred cases; out of that number, a good many cases were treated in the outset after the usual course laid down by our standard works. In eight out of twelve cases I was compelled to resort to the creosote or lose my patients. I am thoroughly convinced from experience, that if not a specific in this disease, it will, beyond the shadow of a doubt, do more in effecting a cure, than any other agent, or combination of agents I have ever tried, or have known to be tried. I am sure that it only requires a trial to convince all who may use it, that I do not claim as much for it, as it is justly entitled to at the hands of the profession.

ARTICLE XXIX.


The novelty of the case which I am about to lay before the reader, will be apology sufficient for its publication.

On the 4th of April last, I saw Mrs. E——, ætat. 74: of sanguine nervous temperament; of active habits, for a woman of her age. Found her in the following condition:

The muscles of the left extremities were in a constant, rapid and powerful convulsion; the limbs were thrown into all possible positions—flexion, extension, rotation, abduction, adduction, pronation, supination; not a muscle in either arm or leg, but what seemed to be in action almost every moment. Except during sleep, these convulsive movements were incessant, and so powerful that they could not be restrained by the aid of the attendants, without resorting to force incompatible with the comfort and safety of the patient.

The muscles of the trunk, neck and face of this side (the left)
Brandon, on an Anomalous Nervous Disease. [October,

were, to an extent, similarly affected; but as the muscles of these regions are more limited in their movements, of course the symptoms were less prominent than in the extremities. All volition over the muscle of that side was paralyzed. The patient seemed frequently to make great effort to bring the will to bear upon the muscles, but without effect. Upon the right side there appeared nothing abnormal; but the limbs were fully under the control of the patient, and she would frequently seize the left with the right hand, and endeavor to restrain its spasmodic movements, or protect it from abrasion, &c. She suffers no pain, sensation perfect, intellectual faculties unimpaired; pulse 85 to 90; tongue slightly furred; appetite good; thirst rather inordinate, not intense; face somewhat flushed; skin natural; bowels regular. Upon enquiry, the patient gave me the following, which seemed to be a very intelligible account of her attack:

For two or three days before the convulsions came on; she had had vertigo, with some slight headache. Her appetite had been craving—had indulged freely. On the day preceding the attack, at night, she had ridden on horseback two or three miles. That afternoon could hardly sit up, owing to the vertigo; but ate freely of meats, &c., at night. Soon after lying down she felt a lancinating pain in the region of the cerebellum or medulla oblongata, which continued, at intervals, for several hours, and then ceased. About the time she experienced the pain, she became very restless, a general malaise pervading the system, and in a short time the convulsions set in. For some years she had had very frequent attacks of diarrhoea; but for the last six or eight months, her bowels had been in a better state; rather disposed to constipation.

Her father and a sister had died of paralysis, of short duration, (perhaps appoplexy?)

I first saw her thirty-six hours after the attack, and found her as above described. After observing her condition for a time, I find that she sleeps occasionally, from five minutes to three hours. During sleep, every convulsive movement ceases; not the twitching of a muscle visible; and she, to all appearances, rests as comfortably and sleeps as quietly as in health. But upon the very instant of waking, the terrible agitation of the muscles begins anew, which continues until sleep again interposes for its temporary cessation. The intervals between sleep are from one to six hours.
After the case had progressed several days, she suffered from what she termed, cramp in the side: caused, I presume, from the spasms of the muscles in this region. I should have stated, that there were none of the ordinary evidences of spinal irritation—that is, no tenderness from pressure. While I frankly confess the difficulty of arriving at a perfectly satisfactory diagnosis, I venture to give the reader my conclusions in the case—viz., that it was an irregular form of apoplexy.

I will not claim the patience of the reader, and the space here, for the useless detail of the condition of my patient, and the prescriptions made, day after day, during the whole progress of the case; but will give, briefly, the plan pursued.

In the first place, cups and blistering to the nucha, sinapisms to the spine, hot mustard foot-bath, cold to the head, and active catharsis with aloes, rhubarb and calomel were employed. This treatment proving of no utility, opiates and antispasmodics, camphor, chloroform, internally, &c., were then resorted to; counter-irritation continued. These remedies, with cathartics, when required, were kept up for several days. But the means employed produced no modification of the symptoms whatever, only so far as the opiates induced sleep, and gave the patient longer periods of rest than she otherwise would have obtained; this being the only means that rendered her case tolerable.

At my second visit, Dr. M. R. Ballenger saw the case; whose opinion was consulted, and acquiescence obtained in the treatment.

On the eleventh day of the attack Dr. H. V. M. Miller saw the case with me.

Other remedies having failed, we determined to try the effects of blood-letting, and nausea, by tart. emetic. Whatever benefit these means might have produced at an earlier period, in the case, we cannot say: at this time, they were as nugatory as those that had preceded them.

The symptoms continued the same, except that the convulsions were less vigorous, as the general muscular strength gave way—which it did by slow degrees, almost from the inception of the disease. There was considerable abrasion of the more exposed portions of the affected limbs, for which ordinary remedies were used. For three or four days preceding death there was some delirium, but for the greater portion of the time there was no
mental aberration apparent. Death occurred on the fifteenth day from the attack.

Death seemed to be the result of sheer exhaustion, from the long-continued and powerful muscular action. As the general strength yielded, the convulsions became less and less violent, until the last hours of life the movements amounted to little more than a slight twitching of the muscles.

Here we have a disease preceded or ushered in by vertigo; severe, but temporary, pains in the region of the cerebellum; rapid, involuntary movement of the muscles of one half the body, with paralysis of volition on that side; sensation perfect. The other side unaffected. No morbid mental manifestations. What is it? Was my diagnosis correct? I am free to acknowledge that there were no truly pathognomonic symptoms of apoplexy; but the same difficulty obtains in the probability of it being any other disease.

While the reader may not agree with me in diagnosis, he will readily consent to the singularity of the case, and that it bears but little analogy to any disease, as described in the books, at least in such as I have access to. As stated in the outset, the singularity of the case has induced me to give this brief and imperfect account to the profession, and not from any practical benefit that might result from its publication.

[A private letter from the reporter of the above interesting case, has induced us to attempt some investigation for its explanation. Were it not for the advanced age of the patient, we might, at first glance, suspect that here, we had a case of chorea; it presents, in a marked manner, some of the characteristics of that fearful disease; but we think that it more nearly simulates what Dr. Todd, in his Clinical Lectures, terms "choreic hemiplegia." If such is its nature, it is an extremely rare case of a rare disease; for every one of the few cases reported by him have occurred in children or persons in early life. There can be little doubt, that there are states of the nervous centres approaching the apoplectic, in which, while the control of volition is null, yet the polarity of the motor centre is exalted. This is doubtless the ordinary pathological condition in true chorea, and we have but little doubt, that it is such in what Dr. Todd terms choreic hemiplegia, of which we feel constrained to recognize a case in the one above reported.]
ARTICLE XXX.

A few words in Defence of Veratrum Viride. By U. G. MITCHELL WALKER, M.D., of Cahawba, Alabama.

In this short communication, I propose to make a few remarks upon the virtues of Veratrum Viride, in the treatment of inflammatory affections, particularly those involving the lungs and pleurae: not that I believe, I can add anything new, to what is already known upon the subject, but only hope that these remarks may induce some one who is disposed to be skeptical and unwilling to use a new remedy, to make a fair and impartial trial of it. I have very little doubt that if such a one will judiciously use it, under favorable circumstances, that he will be convinced of its usefulness and well deserved merit.

Now, when inflammatory action is going on in the "capillary structure" of the lung, and high inflammatory fever prevails, with the symptoms consequent upon the inflammation, to relieve this excitement and bring about resolution, to restore a perfect physiological action without exhausting or carrying the patient through a severe depletory course, from which he takes weeks, and in some instances months, to recover, surely the physician achieves a great end when he can do it by milder means, and with greater safety to his patients. In veratrum viride, I believe, to a great extent, we have a remedy capable of accomplishing such an end. Though not ignoring the lancet, when properly used, or believing that veratrum viride has rendered it entirely useless, I believe veratrum to be a great adjuvant when we wish to keep up the sedative influence produced by the lancet.

Veratrum viride has probably done as much good in the treatment of pneumonia, and exerts as much control over this disease, under certain circumstances, as any drug in the Materia Medica; and without wishing in this article to speak of its general application, I shall confine my remarks to its use in the relief and cure of pneumonia.

Of late years, this disease seems to have undergone a modification, and does not demand the use of those active depleting evacuants once so much in vogue for its relief, and without which no judicious practitioner would consider his patient safe. But at the same time that it has lost, as it seems, the former severe inflamm-
matory action, still vascular excitement is sufficiently high to call for a medication, of a depletive, or more strictly speaking, a sedative character. Inasmuch as the pneumonia seems to assume a type intermediate between a sthenic and an asthenic character, it does not demand the active depletion which true sthenic pneumonia calls for, and, on the other hand, it is not sufficiently asthenic to require a stimulant or active stimulating treatment, at least in its first stage. Now, for the management of this form of the disease, veratrum viride seems especially adapted: Whatever may be its precise modus operandi, and whether it exerts a change over the constitution of the blood, which favors a convalescence, yet remains to be proved. But it is evident that patients recover very rapidly, and without any of the unpleasant symptoms often noticed after active cathartics and bloodletting have been employed. At the same time that it exerts so powerful a controlling influence over the excited action of the heart and vessels, and controls the excessive supply of blood sent to the inflamed part, by the sedative action of the remedy, we allay too, to a great degree, the exalted nervous action frequently noticed in many cases, without the use of opiates, which, under some circumstances, may be injurious. Again, at the same time too, that we see it exerts this happy tranquilizing and sedative effect upon the nervous and circulatory systems, it excites the secretions and favors the rapid convalescence by thus aiding expectoration and diaphoresis. And this happy effect upon the system can be attained without producing the least unpleasant symptom. Many, I believe, abstain from making use of the remedy, when their better judgment would dictate its use, from fear of the unpleasant effects its opponents urge against its use. To such, I think they need have not the slightest ground of fear, if it is properly and judiciously administered. A remedy possessing such decided power, common judgment at once says "use it cautiously," and when thus used, I repeat, no one need entertain fear of evil consequences from its administration. When through the urgency of the case, we are obliged to make a free use of the medicine, and nausea and slight prostration supervene upon its application, it is immediately overcome by the administration of a few drops of laudanum, or essence of ginger, or brandy and water.

Some oppose its use by saying—owing to certain "abortivon effects" it possesses, it cannot be given when pregnancy compli-
cates the pneumonia, but these objections, so far as I have been able to ascertain, are entirely groundless. When excessive nausea and powerful emesis occur from a heroic administration of it, I dare say, owing to the great disturbance of the whole economy, miscarriage in some instances may have occurred; but would not the same result have followed an over-dose of tartar emetic, or any powerful emetic and depressor? Again: and coming from such high sources too, which makes me tremble, almost, to assail in the most delicate manner, lest I should be severely handled by them who have grown grey in the profession—some say, "yes, we admit you can control and bring down your rapid and bounding pulse from 130 or 140 beats per minute, to 75 or 80, or even as low as 45 or 50; but at the same time you control your pulse, you do not control your disease, and thus, by taking away the index you cannot tell what the true condition of the circulation is, and leave you in doubt relating to the true condition of the patient." Now, at first, this seems to partake of philosophy, but let us examine and see if theory, or what is better than all speculation, if actual experience will sustain it. Now, when we have this excessive action in the circulation going on, with this high bounding pulse, owing to the powerful action of the heart, we have an inflamed surface where this constant rush of blood is continually going on, keeping up the congestive and inflammatory state in the capillaries, and producing stasis when it is sufficiently long kept up, which results in destruction of the parts; now, when we bring to bear a force which exerts a sedative influence over the organ which acts as propeller, does it not seem rational to suppose that when we bring about this sedation, that a resolution of the inflammation is at all events likely to ensue when we withdraw the excessive action?—analogical reasoning would seem to draw such a deduction. But in addition to this, we have the testimony of experienced physicians, and those men too, practical in the extreme, who, with sound judgment, never allow beautiful theory, or anything partaking of the flight of fancy, to allure them away. Those who are practical in an eminent degree, give us their testimony to the effect, that when such a state of things exist, they have seen veratrum viride work wonders.

But lest I seem to laud too much the virtues of a valuable remedy and weary my readers, I will desist, and close this article by recommending the mode and dose, from which the happiest effects
result, unaccompanied with any unpleasant symptoms: Commence with 4 or 5 drops, or when you have reason to believe your patient easily affected, as low as 2 or 3 drops, with a little sweetened water, repeat this dose every hour with an increase of a drop at each dose, until the patient is brought under its influence.

By thus using it, we have perfect control of the medicine, and by the time we attain to 10 or 12 drops, the patient usually becomes tolerant to the medicine, and we can keep him under the full effect, either by increasing or diminishing the dose, according to circumstances.

The Use of Water in the Treatment of Fever. By ISAAC CASSELBERRY, M.D., of Evansville, Indiana.

We find in the American Journal of Medical Sciences, July number, of the present year, an article on the above subject, which we regret that our space will not allow us to present in full to our readers. Any discussion of this important question which is calculated to bring before the profession the judicious use of this powerful therapeutic agent, in the treatment of fevers, we regard as valuable, for we have ever regarded it rather in the light of a reproach to us, that we owe so much of the attention it now receives to specialists and ultraists—the Hydropathists. Dr. Casselberry’s discussion, however, has proceeded upon entirely different principles from those which result from empiricism, and we are pleased to see true physiological reasoning so well applied in the investigation of a therapeutic measure which, until recently, has only received an empirical recommendation.

Starting with a careful consideration of the anatomical, physiological, and pathological relations of the cutaneous and mucous surfaces of the body, and applying them carefully in reference to the phenomena of fever, he seems to have omitted none of the bearings which these multifarious facts sustain to each other, and as one of the grand results of his induction, he deduces the conclusion, if we understand him aright, that in febrile conditions of the system, there obtains generally, a superabundance of oxygen in the tissues of the free surfaces of the body, and that the predominance of this element contributes largely to the discomfort of the patient, the heat, the imperfect and abnormal nutrition in these various surfaces, and the body generally. He then considers the subject in its
chemico-vital relations, and in its relations to the two nervous systems, both cerebro-spinal and secretory or ganglionic, (which we prefer to his term, "automatic," and finally comes to the practical view of the subject, and to the various methods of practically applying the mode of treatment his essay is intended to advocate.

"The diminished quantity of the organizing force in the external capillaries, caused by recession of blood from these vessels into the portal venous system chiefly, the superior intensity of the chemical force in the blood, thus accumulated in this system in augmented quantity but perverted quality, and the consuming force of the imperfectly combined oxygen of the atmosphere, introduced into the blood at each inspiration, resist the fulfilment of this restorative indication. The imperfectly combined oxygen is not only consuming, by molecular combination, the nutritive elements of the blood, but also the solid tissues.

"A complete lesion of nutrition is soon produced; the chemical force, in its multiplied forms, rapidly augments in intensity by superior quantity; the sensations of thirst and of increased heat are urgent and agonizing; pain is felt; oxygen is consuming the sensitive nervous branches.

"The first indication to be fulfilled is the removal of this oxygen. This must be done by molecular combination.

"As vacuity always favours absorption and repletion retards it; and as the external capillaries are comparatively in the former condition, while the hepatic and renal capillaries are strictly in the latter, it follows that absorption would take place with much more celerity in the former. When this abnormal state of the circulation is associated with the physiological fact, that the different forms of the automatic nervous force maintain and control the elements of the blood in the external capillaries, while pathology as plainly indicates that those of the chemical predominate more or less over these elements in the visceral capillaries, a comprehensive appreciation of the varied functions of the organism and of the compensatory assistance they afford each other, most conclusively show, that curative means should be addressed to the external capillaries commensurate with their depurative and compensatory functions.

"This proposition is supported by the anatomy and physiology of the cutaneous tissues as well as their physiological relation of function and pathological compensatory assistance. We have abundant evidence that the sensitive and excito-motory nervous branches are largely distributed to the tissues, through which the external capillaries are ramified, by which these nervous branches are supplied with nourishment, and receive the disturbing impression of the chemical force; that the tissues to which the visceral capillaries are distributed have no sensitive and excito-motory
endowments; that the sensitive nervous system is the agent the
automatic employs to bring the organism into relation with the
external world; that the excito-motory is the agent it uses to pro-
tect the organism from external objects; and that these two nerv-
ous systems often lend a compensatory aid to the automatic. Their
restoration and conservation should, therefore, always be a prima-
ry object.

"The existence of imperfectly combined oxygen in the external
capillaries will, for this physiological reason, be instantly evinced
by the sensation of pain and increased heat of the skin and the
manifestation of involuntary muscular motions, while a propor-
tionate quantity of uncombined oxygen in the visceral capillaries,
which have not these nervous endowments, would only excite the
sensation of thirst and oppression. The imperfectly combined oxy-
gen should, therefore, be consumed by molecular combination in
the external capillaries and be removed by secretion, so that the
sensitive and excito-motory systems would be in a condition to
lend compensatory assistance to the automatic in the depuration
of the blood in the other depuratory glands. How can the remo-
val of the imperfectly combined oxygen of the atmosphere in the
external capillaries be accomplished? By the use of water. Its
temperature and its mode of application must be governed by the
state of the different forms of the automatic nervous force. This
is indicated by the augmented or diminished quantity of blood in
the external capillaries; by the temperature of the skin; by the
mechanical force of the muscular action of the heart and arteries;
by the state of the venous system, whether congestion exists in
any of the great depuratory glands or not; by the decreased and
perverted, or the increased and perverted, sensibility of the sensi-
tive nervous system; by the irregular and involuntary muscular
motions of the excito-motory system; by the lesion of the nutri-
tive process; and by that of those of secretion.

"When warm water is properly applied to the cool skin, a
certain quantity of its heat is instantly transmuted into animal
electricity. This gives increased intensity to all the forms of the
automatic nervous force; the molecular changes of the blood are
augmented and accelerated; water is absorbed; the imperfectly
combined oxygen in the blood attracts the hydrogen of the water,
combines with it, and is secreted in the form of sweat; the oxygen
of the water combines with the carbon of the blood, evolves heat,
and is secreted in the form of carbonic acid gas. A comfortably
soothing sensation reigns supremely through the tissues endowed
with sensitive nervous branches. The external capillary circula-
tion is greatly augmented and accelerated; an increased quantity
of arterial blood is attracted and introduced into these vessels by
the superior intensity of the molecular changes of its elements;
the mechanical force of the muscular action of the heart and arte-
ries is stronger and more tranquil; respiration is freer and less
hurried; copious sweating ensues; and a large quantity of effete elements are depurated from the blood.

"When the skin is hot and dry the water used should be cool. Why? Because there is an abnormal quantity of animal heat and electricity retained in the external capillaries by deficient secretion.

"The low temperature of the water increases its capacity for animal heat and electricity, and promotes the affinity of its elements for each other. When it is applied and retained upon the skin, it attracts animal heat and electricity, and causes the secretion of an increased quantity by the cutaneous glands. When the aggregated heat and electricity are thus removed, the different forms of the organizing force assume increased activity; water is absorbed and decomposed; the molecular changes, which then ensue, are the same as those that transpire when warm water is employed.

"Sweating may, and often does transpire freely without any considerable diminution of the temperature of the skin; because it is only one of the processes of the secretion which takes place in the cutaneous glands. In this state of the skin, the indications for the employment of cool water are nearly the same as when it is hot and dry." * * * * * *

"I have shown that the hepatic, renal, and intestinal capillaries are more or less replete according to the degree of portal congestion; that repletion retards absorption; that the different forms of the chemical force predominate over those of the automatic, when this congestion exists; and that this predominance always decreases and alters, or augments and perverts absorption and secretion in a proportion of equivalence to its degree of prevalence. Hence it is an obvious fallacy to endeavor to restore the normal secretory action of the hepatic, renal, and intestinal glands by the introduction of large quantities of water into the alimentary canal. It is not only erroneous, but often positively injurious, because the mechanical force of distension by an elastic substance like water always favors absorption, while it proportionately retards secretion. The capillaries of these glands are already too much distended by the aggregated blood; why increase their distension by the introduction of water? The blood is so altered in quality, and so perverted in elementary arrangement and chemical composition, that it cannot undergo normal molecular changes. Will not the additional water introduced by abnormal absorption augment the perversion of the cellular mutations between the elements of the blood by the superior intensity of an increased quantity?

"The sensation of thirst is urgent and agonizing. Will the drinking of copious portion of cold water allay it? The experience of every physician answers that it will not; but, on the contrary, it will do a positive injury so soon as the quantity is sufficient to distend the stomach, and, by the mechanical force of its..."
pressure on the mucous coat, accelerate its absorption, unless it be happily ejected by vomiting, when the sufferer will feel joyously relieved. A few moments' sweet repose will follow, when the sensation of thirst will return, if possible, more agonizing than before. If copious draughts of cold water afford no relief, if it often be a positive injury, what must be done? Do what pathology imperiously demands.

"Neutralize, by molecular combination, the imperfectly combined oxygen of the atmosphere in the blood by the proper use of water. How can this be done? Appease the urgent thirst by the use of ice, broken into small pieces and swallowed; and when ice cannot be obtained, by small quantities of cold water. Ice is more efficacions than water; it is much more slowly absorbed, and seldom or never does injury by distension. Its hydrogen is at first feebly attracted by the imperfectly combined oxygen in the blood; only a small portion is combined and forms a component part of the water of the blood, while its oxygen has a feeble affinity for the carbon of the blood, in consequence of the imperfect elementary arrangement of the molecular combination of the carbon. As but a small quantity of the water of the ice is absorbed and decomposed, its hydrogen neutralizes by combination an equally limited amount of the imperfectly combined oxygen in the blood; and as this oxygen is introduced in ample quantities at each inspiration, it follows that its consumption should be commensurate with the quantity introduced. Hence the necessity for the employment of water externally. The skin presents a surface of about fifteen square feet, and is liberally endowed with absorbent and secretory glands. These have the same tissual endowments as the same kind of glands in the abdominal and thoracic organs, and associated in intimate structural arrangement are sensitive and excito-motory nervous branches. As pile upon pile increases the intensity of the electric current, so endowment upon endowment augments the resistance of any particular class of tissues to the force of a disturbing cause.

The mode in which water should be employed when the design is to remove imperfectly combined oxygen from the blood, is plainly indicated by the anatomy and physiology of the skin. The cuticle is of firm structure, and in a greater or less degree covered by an unctuous secretion, which resists the introduction of water by absorption; and, although it is penetrated by a vast multitude of openings or pores, yet these are oblique and often filled by the unctuous secretion, commingled with other secretions and dust so as to resist the admission of water.

"Physiology teaches that cells are the agents the automatic nervous force employs to produce molecular changes in the blood; that they generate and develop, control and distribute animal heat and electricity; that a tissue is a good or a bad conductor of these forms of matter according to the facility and rapidity with which
this force can produce molecular changes; and that the capacity of every tissue for the generation, development, and distribution of animal heat and electricity always bears a relation of equivalence to the quantity and the degree of rapidity which the cellular changes of its nutritive materials may transpire. Hence the fluids and the soft solids produce more of these forms of force or matter, and are better conductors of them than the skin.

"When it is designed to relieve the blood in the external capillaries from aggregated heat and electricity, and imperfectly combined oxygen, it is therefore necessary that the molecular changes should be augmented among the elements of the blood, and that a conducting medium should be applied and retained upon the skin for some time, that the requisite molecular mutations may be produced in the cutaneous capillaries, and that the product of these changes may be conveyed to the surface of the skin. Water is the best medium for this purpose, because the imperfectly combined oxygen in the blood has a strong affinity for its hydrogen, while its oxygen has an equally strong affinity for the carbon of the blood. These reciprocal affinities accelerate the molecular changes of the elements of the blood, and thereby promote the absorption and molecular combination of the water."

"The local use of water often contributes greatly to the comfort of the patient, and assists essentially in the fulfilment of important indications of cure by consuming the imperfectly combined oxygen, by which the sensitive nervous branches are soothed; the excito-motory, tranquillized; and the automic invigorated. During fever, especially when the skin is hot and dry, three or four folds of linen, wet in cold water and laid upon the forehead, often confers a boon of relief from agonizing pain and burning heat, and thereby contributes essentially to restoring the diseased transformation of the tissues to a normal state by eliciting the compensatory assistance of the sensitive and excito-motory nervous systems. Relieved of the excess of the imperfectly combined oxygen locally manifested by the sensation of pain and burning heat in the external capillaries of the head, these nervous systems impart increased intensity to the different forms of the automatic, augment and accelerate the molecular changes of the blood, and promote the secretion of additional quantities of the effete elements of the blood by the depuratory glands. Congestion of the brain is often only simulative not actual. This state of the brain is often observed; and I apprehend it is frequently mistaken in our Western alluvion districts, in which individuals are exposed to all the atmospheric vicissitudes incident to a climate, whose physical geography is chiefly composed of rich alluvial soil, clothed in forest trees and vegetation luxuriant in gorgeously exuberant foliage, variegated by winding and often sluggish streams, stagnant bayous, and deep, silent lagoons, which, in the summer and a part
of the autumn, are exposed to a high temperature during the day, and a low temperature during the night, causing the atmosphere to be more or less loaded with warm moisture during the former period, and a cool, dense vapor during the latter.

"Pathology teaches that the sensitive and excito-motory nervous systems often lend a compensatory aid to the automatic; and that without them the latter could not maintain all the attributes of the human organism; for although the automatic elaborates and appropriates the material to sustain and perpetuate these; yet it must employ one of them as an agent to bring it into relation with the external world, and the other for the production of muscular motion. The autonomic supplies the creative, sensitive, and motive power; the sensitive and excito-motory are endowments which it employs for the manifestation of the higher and nobler attributes of intellectual beings. Hence all these nervous systems maintain a relation of mutual dependence on each other. They all perform functions indispensable to the conservation of the human organism. The imperative necessity for eliciting the reciprocal aid of these nervous systems in simulative congestion of the brain is, therefore, obviously manifest. How can this be best accomplished?

"The automatic system is endowed with the creative and distinctive agencies of the organism. These are no longer equal to each other; the destructive predominates. How can this predominance be subverted? The molecular changes of the blood are not normal. The blood is becoming more and more contaminated by effete elements. Normal nutritive elements cannot be introduced. Those which exist must be depurated. The depurative glands of the skin and lungs have sensitive and excito-motory nervous branches in intimate relation with them, while those of the liver and kidneys are without those efficient endowments which always give increased intensity to the different forms of the automatic nervous force. This combination of nervous endowments, which are ever ready to compensate for the deficient functions of each other, bestows upon the tissues to which they are distributed a much more durable resistance to the force of a disturbing cause than that possessed by those which are endowed with automatic nervous branches only."

"The molecular changes of the blood in the minute capillaries about the origin of the excito-motory nerves, and that of the sensitive nerves which arise from the medulla oblongata, are increased in intensity, augmented in quantity, and altered in quality; the elements of the blood are formed and transformed, coalesced and rearranged with multiplied celerity; the nervous roots and adjacent tissues are supplied with additional quantities of nutritive material; more powerful reflexed actions are transmitted; the
compensatory aid of these nervous systems begins to be manifested. Now apply a folded napkin, wet in hot water, over the epigastric region; inspiration is freer; an increased quantity of oxygen is absorbed, and an additional quantity of carbon is secreted by the augmented molecular changes of the blood in the pulmonic capillaries. The mechanical force of the muscular action of the heart and arteries soon receives increased power from the altered quality of the blood conveyed to their muscular tissue by their nutritive arteries, and an augmented quantity of blood is propelled and conducted to the external capillaries, in which the different forms of the automatic nervous force have received increased intensity by reflexed action. This intensity may be greatly augmented, and the reflex action made much more conducive to its integrity by enveloping the arms and legs in three or four double of linen or domestic, wet in hot water, and retained for at least half an hour; because the imperfectly combined oxygen of the atmosphere, conducted along with the blood into the external capillaries, would then attract the hydrogen of the water, combine with it, and constitute water, which would be removed and deposited on the skin in the form of sweat; while the carbon of the blood would combine with the oxygen of the water, evolve heat, and be removed in the form of carbonic acid gas. Freed of the consuming force of the imperfectly combined oxygen, the sensation of pain and burning would not be experienced; the compensatory force of reflexed action would be more manifest, because it would be consumed chiefly by imparting increased intensity to that of the different forms of the automatic, and not by the manifestation of perverted sensation and involuntary muscular motions. It would, therefore, contribute to the molecular changes of the blood, and accelerate its depuration in the external capillaries by favouring absorption and promoting secretion. When we review the immense extent of the skin, when we contemplate the magnitude and wisdom of its endowments, we can appreciate the advantages of its agency in the restoration of the organism, when the varied forms of the automatic nervous force are disturbed and ready to invite the oxygen of the atmosphere into the citadel of life. The arms and legs may be constituted into four fields for the subjection of the rebellious elements of the blood; the commanding officer must be selected and nurtured in the cerebrospinal region; while new recruits must be trained and mustered into the service of the organism along the course of the alimentary canal.

"Copious injections of water should never be omitted in the treatment of fever, as it prevails in the southwest; because there is always more or less biliary derangement; and there is no more efficacious means for the removal of bile and other perverted secretions from the alimentary canal. When the functions of the stomach are so perverted that it will not retain medicine, copious
injections of water often have a very salutary effect by removing the altered secretions and other fecal matters from the bowels, by which they promote the tranquillization of the disturbed reflexed actions of the sensitive and excito-motory nervous systems. This state of the stomach often constitutes a most troublesome complication in the treatment of fever. It is frequently observed in persons who suffer of fever during the hot days of August and September. Copious injections of warm water should be frequently employed; a towel, wet in cold water, should be folded and laid over the entire epigastric region; three or four folds of domestic or linen about six inches in width, wet in cold water, should also be applied over the whole length of the spine and retained for an hour or two; a folded napkin, wet in cold water, may often be advantageously applied over the larynx, especially when the vomiting is persistent. The application of water in this manner, is of peculiar advantage in controlling the persistent vomiting of children during the period of dentition, because of its efficacious influence in tranquillizing the reflexed actions which the evolution of teeth so greatly augments. Both the colliquative diarrhoea and the persistent vomiting which so frequently afflict children during this tender period are chiefly dependent upon, and often are perpetuated by, this perverted nervous action.

"Unless the individual is of intemperate habits the use of water, as here directed, seldom fails to tranquillize the stomach, remove the perverted secretions from the bowels, and prepare the organism for the favorable reception of other remedial agents.

"Dr. Henry F. Campbell, of Augusta, Ga., has published two very able and interesting essays on the pathology of reflexed nervous actions during dentition and during fever, with certain complications. These are invaluable contributions to medical science, and they will serve as beacon lights to every pathologist. (South. Med. Jour., for June, 1850, and Trans. Amer. Med. Ass. for 1858.)

"After the bowels are freely moved and the stomach nearly tranquillized, great advantage may often be derived by enveloping the patient in sheets wet in cold water. Dry sheets should be rolled neatly around the wet ones, and the whole allowed to remain until the sensation of heat and pain is removed. From half an hour to an hour will generally be sufficient to produce this effect. The prompt and judicious administration of quinine will generally prevent the recurrence of these symptoms. During the forming state of fever, and often during the first day or two of its progress, obstinate constipation is frequently observed. For the removal of this complication large injections of warm water are peculiarly efficacious, because they neither offend the stomach nor delay the administration of other appropriate agents. They promote the dejection of the accumulated fecal mass and depraved secretions, and contribute to the normal restoration of the perverted nervous functions.
"Diarrhoea is a very troublesome complication of fever, because it greatly promotes the debility consequent upon the fever, causes nutritive material to be voided before it is assimilated, and renders remedial agents much less efficacious. It is often present during the progress of a fever; but it is much more frequently observed during the protracted continuance of a fever as it prevails in our alluvion river bottoms, with a vast multiplicity of complications. No remedial agent is more efficacious in the removal of the cause of this diarrhoea than large injections of cold water. These should generally be employed twice or three times a day; but they may often be advantageously used after each evacuation of the bowels. The long continued recession of the blood from the external capillaries and its persistent lodgement in the portal venous system, contribute to the perversion of the functions of the vast multitude of absorbent and secretory glands along the course of the alimentary canal, because of its accumulated quantity and altered quality in the intestinal capillaries; while the augmented amount and perverted quality of the biliary secretion is conveyed to the organizing force of many of these glands; but this force is so diminished in intensity by the altered quality of the blood in these glandular capillaries, that when the perverted biliary secretion approaches the glands its nascent formative condition is transmuted, and the constituents of the food, which it was forming into elements of blood, are attracted, combined, and dejected with this altered and perverted faecal compound. This constitutes what is commonly called irritation of the mucous membrane of the bowels.

"When we see the vast number of absorbent and secretory glands in the mucous membrane of the alimentary canal; when we contemplate the important and multiplied functions they perform for the conservation of the organism, we can easily appreciate the immense advantages of their constant and careful protection, and of their earliest possible relief when disturbed in functional duty.

"In the treatment of this complication of fever I greatly prefer cold water injections to all the much commended astringents, because they seldom favor the production of other and often more dangerous complications, as some astringents frequently do; and they promote the establishment of a state of the organism favourable to the administration of quinine and other necessary remedial agents.

"Bathing is often a valuable therapeutic agent to harmonize the relation between the nervous systems when no considerable degree of diseased transformation of the tissue exists. It may, therefore, be often advantageously employed in the forming state of fever, or during the convalescence of a patient."

We are unwilling to conclude even our brief remarks on the therapeutic application of cold water, without referring to the ex-
cellent articles of our valued contributor, John Stainback Wilson, M. D., of Muscogee County, Ga., on "Hydro-therapeutics."

As our readers are familiar with this series of Essays, we do not think it necessary to reproduce them in this place, but would earnestly ask that they be read again in connexion with Dr. Casselberry's treatise, for in these four articles we find collected some of the most thoroughly practical and useful views and precepts to be found anywhere upon this important subject.

We hope Dr. Wilson will continue his Essays, as we think he could not do the profession a better service in the therapeutic department than by so doing. His former articles will be found in the twelfth volume (for 1856) of this journal, the series running through the numbers for October, November and December.

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Meteorological and Nosological Report for Memphis, Tennessee; during the first six months of A. D. 1857. With an Appendix on the Pathology of Zymotic Fevers. By Daniel F. Wright, M.D., Secretary of Board of Health, and Professor of Physiology and Pathology in the Memphis Medical College.

Scattered through this able report, we find, many important views and many valuable facts, which have practical bearing upon the phenomena of climate and disease in their mutual relations. Facts, and tabular statements which can be used hereafter by others, in forming important inductions for the investigation of these and kindred subjects; but it is more particularly to the appendix of the report that we wish to call attention; for here the author has worked up the facts for himself, in that particular train of thought, which make them subservient to a special set of conclusions referring to the etiology and pathology of zymotic fevers. This appendix we beg leave to lay before our readers. The collocation of facts will be found most apt, and the inductions from them of the most striking character. It gives us extreme pleasure to see, how now medicine and medical and pathological phenomena are beginning to be investigated, not hastily and skimmingly and slouchingly, and we might add aimlessly, but deeply and minutely, and with a definite object in view, ever keeping every relation of every fact, however remote in their general aspects they may appear to be to each other. One sided views, narrow reasoning, and special conclusions, seldom accomplish much inductive reasoning. Wide and comprehensive must be the
generalization, and well balanced the intellect that can hope for safe and durable results in the broad fields of inquiry every day opening to the present generation of investigators; anatomy, physiology, pathology, chemistry, meteorology, and physical laws, and then the obscure, but at the same time important bearing vital forces exercise upon all these, when brought in relation with the animal economy, must be the familiar implements of the true medical logician of the present day; nothing less than the whole circle of the sciences will be tolerated, because, nothing less than the whole circle of the sciences will complete the chain, and make us feel safe in accepting the teaching from any source. If any weak point remains, the whole is weak, for "in argument as in architecture, no structure is stronger than the weakest part." A chain which has a feeble link, though it may in other parts, be strong enough to moor a universe, is still no stronger than that weak link.

Professor Wright's remarks present the novel recommendation of looking closely into the minute relations of things, and developing their bearings in the aggregate, in great results. At the conclusion of the Report, he remarks—

"In the above report I have spoken of the exanthematos disorders so prevalent last spring, in a manner which, if not altogether novel, is yet sufficiently unusual to excite some discussion. I have spoken of them as liable to originate in certain Thermometric and Hygrometric conditions of the atmosphere. This idea in reference to diseases generally considered contagious, or, at least, infectious in their character, will naturally be deemed to demand some explanation; so, at least, even if I should fail to make out my point, I shall be expected to state precisely what is my position in reference to these diseases. To commence, then, I think it may be easily seen that, whatever may be people's views with regard to their contagious or infectious character, neither is inconsistent with the possibility of an atmospheric origin for their epidemic prevalence. I shall endeavor to show, in other words, that an atmospheric cause may, without contradiction, be supposed to produce disease, which, when produced, may become communicable, either by infection or contagion. Is not, then, a dry, cold condition of the atmosphere at any rate, calculated to predispose the skin to a morbid condition? The commonest experience shows that under such circumstances the skin does suffer—chapped hands and lips, chilblains, etc., are familiar evidences of this; but the question arises whether the prolonged effect of these influences on the skin may not produce
morbid conditions affecting the system generally? To estimate this question aright, let us consider some of the functions of the cutaneous surface. In treating of the skin as a secreting organ, physiologists have, I think, too much limited their attention to its secretion by the sudoriferous and sebaceous glands. Important as these may be, it seems to me that they are far subordinate to that great system of excretion that depends upon its constant epithelial desquamation: of all products in the human body the solid substance excreted by the exfoliation of the epidermis abounds most in nitrogen, and seems, according to the best analyses, to contain ammonia ready formed in considerable quantities. This being the case, is it not evident that where this process is going on with activity a larger amount of azotised excretion must be effected this way than by all other emunctories put together—the kidneys not excepted? Now there are many evidences that in early spring and summer there is, under ordinary circumstances, an increased activity given to this process. Cutaneous diseases are much more common at this season, the eruptive fevers now under consideration are much more prevalent at this season, than any other, and the analogy of the whole animal creation shows an increased activity in the cutaneous system of nutrition and disintegration—thus we have beasts throwing off their winter coat, as it is called, and the newer and more perfect fur or hair rapidly taking its place, birds moulting and serpents casting their skin, &c.—and can it be doubted that the result of this is the throwing off of various materials which, during the suspension of this function in winter, have accumulated, and would otherwise act as a source of disease? Indeed, the very act of throwing it off seems to constitute a sort of disease, for birds when they moulst, horses when they change their coat, are, as is well known, out of condition—the serpent retires to his den to change his skin, and goes through the process more dead than alive. May not these changes be considered as a sort of normal exanthematous fever, from which the animal comes forth with his winter constitution depurated and invigorated for the procreative season? Now, a well known phenomenon in popular pathology is that of spring-sickness; it is looked upon as a thing to be expected that a certain amount of mild indisposition shall take place at this season—indisposition which is expected to yield to the mild medication of herb teas, etc., and probably does not need even this: these popular impressions, however mixed up with error, always contain some truth at the bottom, and the man of true science, though he may scrutinize them strictly, is always too wise to pass them over. If these season sicknesses are less noticed at the present day than in old times, I think that it would still be unphilosophical to reject them as exploded chimeras; they are probably less distinctly marked than formerly, from the fact that advancing civilization, with its increased means in the way of clothing, and firing, and well con-
structured dwellings for moderating the extremes of temperature, has really, to a great extent, equalized the seasons and so partially obliterated those periodic revolutions in the animal economy which have given their pathological characteristics to the different seasons. Still much remains to show that the spring especially is a period of considerable constitutional changes in man as well as the lower animals.

And may not the truth at the bottom of all these general facts and general impressions be, that during the spring certain accumulated materials have to be thrown off which have been retained in the blood, through the partial suspension of this epithelial excretion during the winter? To estimate the probability of this, let us consider rather more in detail the effect of cold weather upon this function. Take, for instance, the simple and common phenomenon of chapped hands, already alluded to. Here, at first sight, the phenomena would seem to suggest rather an increased than a diminished epithelial action; the corium becomes bare, the epidermis roughening and becoming split into chinks. But a slight consideration will serve to show that it is not so much the more rapid disintegration of old tissue which is at work, as the less active development of new. Thus familiar observation shows that where the nutritive forces of the skin are unimpaired, any cause which rapidly removes the disintegrated epidermis, (friction, for instance,) tends, by stimulating the nutritive process, to increase rather than diminish the substance and consistency of that membrane—when, therefore, cold effects an exposure of the corium or cutis vera, it is not by excess of what is removed from above, but through defect of what is supplied from below—in short, from a defective nutrition of the skin; and why this should result from cold is plain. The contractile muscle cells, both in the substance of the skin itself, and those entering into the structure of its arterioles, are caused to contract, cold being their most energetic irritant, and thus the supply of blood diminished, which alone is sufficient to account for a diminution in both its nutritive and excretive functions, growth, that is, and its exfoliation of waste substance. But now, if the plastic material prepared in the system for the nutrition of so large a portion of it as the cutaneous expanse be for several months of the year, to a great extent prevented from subserving that purpose, then, what becomes of this unappropriated material? Here the aphorism of Treviranus seems to have much force, “that every organ and tissue of the body in reference to its nutrition, serves as an excretive organ to the rest of the system.” In the rapid changes which the skin goes through in its normal condition, it is difficult to say which is the more prominent, the function of nutrition or that of disintegration, the two processes being so mutually dependent on each other; and can any one suppose that when so rapid a medium of excretion is from any cause retarded or suppressed, when so large an
amount of material, which being adapted for skin-nourishment, is so far unadapted to the nutrition of any other tissue, is retained in the system, that then no disturbance shall take place in the equilibrium of the organic forces?

Let it even be supposed (which, doubtless, does take place to some extent,) that the matter thus accumulating is disposed of by some other medium of excretion, the secretive functions of the kidney, for instance—yet, even then, it can scarcely be supposed that no pathological result ensues. If, even, we could suppose that the excretion could be performed as perfectly when one organ alone performs its own share of the work, and that of another too, still the very fact of the additional calls upon the vicarious organ, would lead us to anticipate, after awhile, derangements in its functions from an excessive demand upon its exertions, and then of course the evil would be redoubled.

And now we are in a position to appreciate the probable effects of just such a spring as we have been passing through.

As a general thing, the bland and genial warmth of advancing spring, gradual in its progress and tempered with a grateful moisture, is exactly the condition calculated to encourage the resumption of the cutaneous functions, at a season when their suspension could not be continued without evil resulting, the gradual elevation of temperature producing a gradual dilatation of the cutaneous capillary system, and thereby promoting a gradually increased nutrition, while the moisture of the atmosphere prevents the exhalations of the sudorific glands from being carried off too rapidly, and allows them to settle on the cutaneous surface sufficiently to keep it in that state of moisture which is most favorable to the exuviation of the waste products of this nutrition. But instead of the growing warmth and genial showers of our customary spring weather, we have, as above shown, had everything reversed. A few days of unseasonably warm weather in February were succeeded by a wintry coldness and arid drought throughout the entire months of March and April. The results naturally to be expected from these circumstances would be, first of all, that the circulation in the skin would be resumed too suddenly, and in such a manner as to favor inflammation rather than increased nutrition; and, secondly, that it would again be cut off entirely—a second winter, as it were, intervening before the effects of the first were eliminated from the system. Thus, not only is there left in the blood and the system at large, the accumulated material resulting from the suppression of epithelial excretion, but a fresh supply added on account of this second suppression, while the skin itself is already in excited or irritable state, from the incipient resumption of its functions early in February being suddenly arrested by the ensuing cold. Can it be doubted that this abnormal accumulation must be now attended by disease? Any accumulated animal matter in the blood, not normally belonging to its con-
stitution, must eventually, if not excreted, undergo decomposition there, so as to constitute what the modern humoral pathology delights in designating a blood poison. Moreover, as the materials of this poison were originally elaborated for the skin, and failed to be so appropriated through a defect of its nutritibility, it is obvious that the skin is their appropriate excreting organ, that their special vital affinity is for that membrane. Here, then, we have a morbid poison seeking elimination through a definite organism, that of the skin, while that structure is in a state of impaired functional activity; and is not the result, necessarily to be anticipated, a morbid excitement of the epithelial process: in other words, a cutaneous eruption accompanied by such constitutional or febrile derangement as is to be expected from the presence of an accumulated and imperfectly eliminated poison in the blood? In other words, have we not shown that all the circumstances with which our population has been surrounded this spring have been favorable to the development of fevers, attended with cutaneous eruptions—the regular exanthematous fevers—that is to say, such as scarlet fever, small-pox and measles? And if we find that, exactly those diseases have prevailed which the considerations we have presented represent as due to the antecedents, then is there not a strong probability that the alleged antecedents have really stood to the results in the relation of cause and effect? I know that the great obstacle to the reception of my conclusions will be the specific character of these diseases, as shown by their communicability by infection and contagion, and by their generally securing persons once affected by them from a recurrence of the same disease.

Fortunately it is not necessary for me to enter the intricate field of controversy, to which the mention of these subjects generally leads. My own hypothesis implies the existence of a blood poison, consisting of organic matter undergoing decomposition as the result of atmospheric influences, which I suppose to be the original morbid cause; and, whether it be the theory of infection or contagion, or epidemic diathesis, which my readers may hold and which I, at present, meddle not with, they are at liberty to suppose that this poison in a solid or fluid or gaseous form, or the catalytic process or decomposing force which it gives origin to is communicable, or finally, that the same causes, acting upon different individuals, produce the same effects. My hypothesis is altogether independent of all these opinions and of the controversies to which they have given rise.

Not that I am without my opinions on those subjects; and I will here mention that the aspect which these diseases have assumed in Memphis this spring is well calculated to modify extreme opinions regarding their specific character. The blending of the types of the several exanthemes, the successive development of their characteristics in the same individual during the same attack,
the simultaneous occurrence of the different exanthesmes in the same family, seem to point significantly to a generic cause, producing specific symptoms, varying in their character according to the constitutional condition of the subject in which its effects are developed. At any rate, whatever may be the difficulties of the atmospheric hypothesis, (and I am not insensible of their cogency,) an insuperable difficulty exists, on the other hand, with those who hold for specific infection as the only origin for these exanthesmes, the question, namely, how did the first case of scarlatina or small-pox or measles originate? I am aware, too, that this mode of dealing with the subject is calculated to unsettle pathological views relating to other specific diseases, Syphilis for instance; and I am prepared for the inference as not indefensible that this scourge of humanity may also have arisen, and may still continue to arise, from a specific and communicable poison indeed, but from one which may be developed without specific infection from the vitiated secretions which arise— from abnormally continued irritation of the reproductive organs, accompanied with a want of personal cleanliness, and if this is contested, the question might again be put, "how did the first case of Syphilis arise?" as was asked before regarding the exanthesmes; and to show what a difficulty this question really is, in the way of candid believers in its exclusive origin by specific infection, we have only to refer to the portentous theories of its original commencement which some of them have been led to adopt: let one be enough, the revival, namely, of Von Helmont's theory of its being derived from unnatural intercourse with the lower animals.—Vide Acton, p. 241, Am. ed.

But this is not a treatise on Syphilis. I have only mentioned this disease to show that I am not at present unprepared for the extension of my hypothesis to other diseases besides the exanthesmes of which I have here been taking especial cognizance."

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Croonian Lectures, delivered before the Royal College of Physicians, 1857. By G. Owen Rees, M.D., F.R.S., Physician to, and Lecturer on the Practice of Medicine at Guy's Hospital.

LECTURE II.

ON FREQUENT MICTURATION.

Mr. President—I now come to the consideration of hysteria as a cause of frequent micturition. Much has been said of the practices adopted by the more juvenile of the opposite sex in order to excite the compassion of those around them. While this perverted state of moral feeling prevails it may sometimes happen that our patient complains of too frequent call to pass urine. This may be true or it may be false. Again, if true, it may be attributable to the hysterical condition, or it may be the result of other
and more tangible disease. The task in cases such as these is no easy one. Sometimes we may detect deceit by according completely with the patient, taking her part, as it were, and leading her to believe we are the dupes of her ingenuity. If she be deceiving, her next step will be to encroach on our presumed credulity, and she may describe some fresh symptom which may serve to lead to her detection.

Thus such persons may be known to present pieces of brick to the medical attendant, representing them to be stones passed from the bladder. My friend, Mr. Lonsdale, lately met with such a case. The irritability of the urinary organs will be spoken of as most excessive during the passage of these bodies, and the usual symptoms of calculus will be very graphically given. They do not describe the frequent micturition as being associated with an increased discharge of urine. It is probable we sometimes see only a part of that which is evacuated, but we may generally judge that only a moderate quantity passes, inasmuch as the specific gravity of what we obtain is almost always sufficiently high.

Whether these patients be hysterical or insane, or the subjects of hysterical insanity,—if that be the politer term,—it matters little; they are guilty of deliberate mendacity, in order to make others miserable; and there we will leave them, with the remark that these are pseudo cases of frequent micturition, which it is merely necessary to allude to, as part of the history of the subject. Frequent micturition is, however, an occasional concomitant of hysteria. It is not only young girls who may become the subjects of the symptom; it is to be observed in matured and married females, and yields to the ordinary remedies for hysteria in their case as in that of young and unmarried women. Now and then the frequent micturition is caused by the secretion of a large quantity of light urine, that symptom so well known to practitioners. At other times this may not persist. The urine may be nearly natural, but with the hysterical symptoms the bladder becomes irritable.

The true nature of these cases is chiefly to be determined by excluding other causes as productive of frequent micturition, and there is usually but little difficulty in doing this. The hysterical symptoms may not be very prominently shown, but if attention be directed to the point the truth appears plainly enough. A knowledge of previous history is very necessary in these hysterical cases. It happened to me to see a young lady about two years ago, in whom the symptoms of frequent micturition was supposed to depend upon hysteria, but in reality was caused by the presence of a mulberry calculus in the kidney. This may appear an unaccountable error. It was only through the history that we arrived at the truth, and significant as the indication was which her story revealed, still the hysterical condition had so completely distracted the mind from the point, and had been regarded by
those who had seen her as so sufficient in itself to explain all, that even the important symptom of hæmaturia was slighted.

As this case is not an isolated one, I will briefly detail it. The patient was a young lady of fully developed figure and of healthy appearance. Her symptoms were principally those of hysteria. She had loin pain to some extent, but not more than we continually meet with in women. The urine was passed often, but nothing remarkable could be detected in it. The persistence of frequent micturition eventually led to close questioning as to the previous history of this young lady, and it was clearly ascertained that she had passed blood on several occasions some months before. I have since heard of a similar case, in which calculus caused irritability of the bladder and slight hæmaturia, hysterical symptoms being present in a marked degree. I would not have it supposed that I am inclined to connect all hysteria with the presence of calculus in the kidney, but these two cases deserve notice, and will serve to warn practitioners against classing frequent micturition amongst purely hysterical symptoms without careful inquiry.

What we, however, see in urinary pathology and its therapeutics is so suggestive that I trust I shall not be regarded as trenching on the field of those who keep the ladies so much to themselves if I offer the results of experience, which is not easily accessible to those who, as obstetric practitioners, may not have made the chemistry of urine an especial study. The connexion existing between the nephritic and uterine branches of the sympathetic are most intimate, but while uterine irritation has been spoken and written of in every possible phase, and while scarce an organ or tissue of the body has escaped the criticism of uterine pathologists, the kidney has by no means received the amount of attention it deserves. I have already mentioned two cases in which calculus existed concurrently with hysterical symptoms, and many cases suggest themselves to my mind, which I am much inclined to believe would have gone far towards establishing the fact that the kidneys are often primarily involved in this affection.

My friend Dr. Lever lately gave me the notes of a case strongly bearing on this point, in which the hysterical symptoms were very severe. Death took place by coma, and post-mortem examination showed the kidneys advanced in disease. The poor girl died with all the symptoms of uremia. Her blood, poisoned by admixture with urinous materials, produced death precisely as it occurs in morbus Brightii.

The next cause productive of the disease under consideration often occurs in connexion with hysteria, but not necessarily so. It consists in the presence of hardened faeces in the rectum. Sir Benjamin Brodie directed attention to the point many years since, and urged the propriety of examining the rectum in order to remove the indurated mass. Purgatives are unavailing, the faeces
requiring removal by an instrument. I was consulted in a case of this kind some three or four years ago, in which the cure was effected by mechanical means. The relief was immediate. There may be occasional diarrhoea, but the rectum contains hardened faces notwithstanding, and the motions find their way by the sides of the concrete mass.

Another cause for frequent micturition exists apparently in a state of skin brought about by the application of cold to the surface. I have seen this produced by an insufficiency of bed-clothing. The case puzzled me much at first. I have known the same result to follow from a married man taking it into his head to sleep alone, having previously slept in the same bed with his wife. Again, I have observed the result in persons exposed to the influence of our colder climate after residence in the East. These cases occur in irritable constitutions, and the skin is generally delicate and thin, but otherwise the health may be perfect. It would appear here that the kidney takes on a vicarious action, owing to the spasm of the cutaneous secreting surface, and irritability of the bladder results as a consequence, in an increased quantity of pale urine being passed.

Amongst causes for frequent micturition, we find diabetes enumerated, and it certainly may become a symptom of the disease. The quantity passed on each occasion is, however, so large, compared with that characterizing most of the other states I have described, that the patient's attention is attracted by the large discharge, as well as by the frequent call, and the former is related as the more prominent symptom. This should lead at once to the examination of the urine for sugar, and if that be not found, we may perhaps determine the presence of insipid diabetes by the low specific gravity, the increased flow, great thirst, and other characteristic symptoms. It does, however, now and then happen in diabetes, that frequent call to pass urine has been the symptom most noticed by the patient, and then if due care be not taken, the practitioner is a long time led astray. Cases such as these by no means infrequently occur. They are sometimes treated as dependent on the gouty diathesis, an uric acid deposit having attracted the attention of the medical attendant. Treatment is then persevered in until all the more aggravated symptoms of diabetes appear. The early detection of this disease, which is so important for its relief, is thus prevented.

I now have to speak of two forms of cancerous affection which may produce frequent micturition—viz., malignant disease of the kidney and of the bladder. These two states are characterized by hæmaturia. It sometimes happens that the irritability of the bladder is so great when the kidney alone is involved, that this sympathetic affection may be mistaken for the primary disease, and the nephritie mischief entirely overlooked. What I would wish to enforce is, that these two symptoms, hæmaturia and frequent micturition, taken
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together, should be regarded (the prostate being excluded) as indicating calculus or malignant disease, and that either the kidney or the bladder may be in fault. The indications of cystitis, shown by the urine when calculus exists, have been already dwelt upon; but when malignant disease is present, there may be none of these. The urine may be clear, or may only contain such a small quantity of blood that very careful examination is requisite in order to detect it by the naked eye. Here the kidney might be considered in fault, and the diagnosis is not always to be made.

If we have a tumour of the abdomen over the region of the kidney, then we may safely diagnose that organ involved; but this indication is not always afforded us, and then we should examine the bladder very carefully. If, on sounding, haemorrhage occur to an extent exceeding that usually produced by exploration, there is most likely a growth on the mucous surface of the bladder.

Before leaving this part of my subject, I must say a word or two respecting the seat of tumour in these forms of disease. First, with regard to the kidney. It is necessary to guard against being led astray by the tumour appearing in a position somewhat removed from that in which it ordinarily exists. Nephritic enlargement sometimes occurs at the upper portion of a kidney, and in abscess of the organ especially, there is often considerable bulging upwards. This may occur to such an extent that the tumour eventually may be felt in that part of the abdomen usually occupied by the liver, and in malignant affections also, if the right kidney be involved, the tumour may exist over nearly the whole of the right hypo-chondriac region. An able paper will be found in the "Guy's Hospital Reports," in which Dr. Bright has given sketches illustrative of this fact.

As regards the production of frequent micturition by malignant disease of the bladder, the tumour must be situated near the neck of the organ in order to cause the symptom. I have had two cases within the last few years especially illustrative of this point. In the one, so little inconvenience was felt that had it not been for the microscopical indications of the urine, I should have inevitably mistaken the disease. There was no increased desire to pass urine, and no pain; and haematuria was only an occasional symptom. Post-mortem examination showed the advantage to be derived from microscopic research, the diagnosis being verified by the presence of a large mass of villous growth on the fundus of the bladder. The situation of the tumour, far removed from the neck of the organ, explained the absence of the symptom of frequent micturition. In the other case, a tumour of the same kind existed near the neck of the bladder, and the irritation was most torturing. The symptoms otherwise exactly resembled those of the former case. There was the same haemorrhage after sounding, and haematuria was of very frequent occurrence. I have spoken
of certain microscopical appearances which determined my diagnosis; these were merely such as I have detailed in former lectures, consisting in the presence of those corpuscles or cells which are found in the villous growths from mucous membranes, and which, when they can be satisfactorily determined to exist in the urine, are always most significant.

It has not yet fallen to my lot to demonstrate the presence of any peculiar structures when the kidney alone has been affected; but the subject is somewhat novel, and it is far too early to propose the discovery of such cells as a positive proof that the bladder, and not the kidney, must necessarily be the part involved in the disease.

Before leaving the analytical symptomatology of frequent micturition, I would speak of the influence of habit and of nervousness in continuing the symptom, even after the obvious causes producing it are removed. With regard to habit, it is in some cases of the greatest importance to inform the patient of his position, and instruct him to restrain himself as much as possible. If he will do this, his malady becomes of necessity of shorter duration. We often find the subjects of this symptom acquainted with every corner suitable for the relief of their wants. They are reminded of their malady on approaching their wonted haunts. An effort is required to pass them, and it is well to instruct such patients to make a point of doing so if they possibly can. The nervous feeling which arises in sufferers from this infirmity when they find themselves in company is very distressing. They are certain to feel the inclination when there is the greatest difficulty in gratifying it. They consequently refuse to go into society. They are, perhaps, urged to do so; they suffer great misery, and their complaint becomes aggravated. This should never be allowed. Let them avoid company, and as their complaint improves they get more courage; and there is no fear of a return of this nervousness, except they again become the subjects of those physical ailments which originated the disease.

This closes the list of causes for frequent micturition which I have proposed to consider, and I shall next proceed to remark on the treatment advisable in some of the more important diseases giving rise to the symptom.

First, with respect to the inflammatory conditions—viz., cystitis, caused by calculus and by retained secretion, or arising after inter-rrhea. I would beg your indulgence while I proceed to premise more practical part of my remarks by considering the anatomical conditions of the lining membrane of the bladder, and the peculiarity of its position when it becomes the subject of inflammation. In connexion with this subject it is important to reflect the effects of disease as observed in the mucous membranes generally.

The mucous membrane lining the mouth, fauces and cesophagus,
and extending to the auus, is known to secrete a mucus in disease, varying in quantity and quality. Its physical and other characters are easily determined, for the reason that we have constant opportunity of separating it from admixture with the solids excreted from the canal. It is not necessarily macerated, nor more or less dissolved in the feces, nor is the character of the latter changed in such manner by the presence of mucus but that we can make due allowance for its presence, and separate in our minds the indications afforded by each. The other part of the gastro-pulmonary mucous membrane, descending into the respiratory canals, secretes, under irritation, a mucus which we can collect nearly at all times in a pure and unmixed state.

Now, neither of the above conditions apply to the urinary mucous membrane. The secretion from the mucous surface of the bladder, and from the whole of the urinary tubes, mixes with and alters the secretion of the kidney. The urine is acted upon and changed by the various results of inflammation, which may be poured out by the membrane, and it is the effect produced on the urine by the fluids resulting from inflammation that it is important for us to remember.

There has been great carelessness shown on this point. The urine has been regarded as not very materially changed by the secretion of the mucous surfaces lining the passages, and the possible modification effected in its constitution during its passage from the kidney to the orifice of the urethra has received but little consideration. An acid and an alkaline state of urine, as evacuated from the urethra, have been too much regarded as indicative of the states of those urines as secreted by the kidney.

Whole pages have been devoted to the explanation of the alkalinity of urine and the cause sought for in presumed states of the general system, while there is little doubt that the kidney has been all the while secreting a strongly acid fluid, which has subsequently become alkaline owing to admixture with the secretion of the inflamed mucous surface. For many years there has been a great horror of alkaline urine, because it is so often connected with advanced disease of the urinary organs; and this fear even extends to the rejection of remedies capable of inducing alkalinity. We hear it said, "We must take care not to make the urine alkaline; if we do we shall cause phosphatic disease." Now I defy any one to succeed in doing this. He may administer alkalies for months and he shall not necessarily cause a deposit of the earthy phosphates. The urine may remain alkaline during all that time, but the effect so described will not take place. All he will do will be to cause the excretion of an urine depositing earthy phosphates on boiling (a necessary result of rendering urine even slightly alkaline), but the earthy salts remain dissolved unless a boiling temperature be applied, and they will not be present in more than natural proportion.
Having taken the opportunity in former lectures of bringing these views before the notice of the profession, I shall not now make any extended notice of the subject further than to refer my readers to the facts and arguments adduced in support of the power possessed by the mucous membrane of the bladder, when inflamed, to neutralize and render alkaline the urine which has been secreted of its full degree of acidity.

The fact that by alkaline treatment we can often succeed in obtaining an acid urine from the urethra when it has previously been of alkaline reaction, is in itself almost a positive proof that the mucous membrane has produced the alkalinity of disease, the fact being utterly inexplicable on any other theory. Alkalies administered in small doses, so that the acidity of the urine, as secreted by the kidney, is only partially destroyed, will, as the mucous membrane becomes less inflamed, eventually cause a faintly acid urine to pass from the urethra; and when the remedy is withdrawn, the urine may be observed of its natural acidity. This, too, happens in cases where acid remedies have entirely failed to afford relief.

After these observations, it will not be matter for surprise that I should speak strongly in favour of alkaline remedies in all cases of inflamed bladder. And, first, let us consider what benefit we may hope to obtain from their use when cystitis is dependent on the presence of calculus. In this form of disease, the mucous membrane being subjected to mechanical irritation, we cannot hope to do much for our patient by medicines. The removal of a calculus, however, may be performed at a favourable or at an unfavourable time; and therapeutics are in this way of much service. The bladder is so circumstanced that its inflamed mucous membrane is constantly pouring out large quantities of secretion, in order to protect it from injury. This irritation once set up by the calculus, is aggravated by the presence of normally acid urine; and so long as the secretion of the kidney possesses an acid reaction, so long will the evil be aggravated. It might be imagined that because the urine is naturally acid the mucous membrane ought to find acidity more genial than alkalinity. This is, doubtless, true in health, but if inflammation occur, the case is different; and I would mention, in illustration of this, the familiar instance of gonorrhœa—a disease in which it is well known the mucous membrane being inflamed, great relief is obtained by rendering the urine alkaline. The alkaline treatment is, then, advisable in all inflamed states of the urinary mucous surfaces; and the dread of inducing the phosphatic diathesis is a mere bugbear which, in my belief, by interfering with correct therapeutics, has cruelly added to the sufferings of humanity.

In my lectures of last year, I described the plan I adopt in order to render the urine alkaline, as secreted by the kidney—viz., the administration of the neutral salts of vegetable acids. These
enter the urine very rapidly as supercarbonates, and according as the bowels require to be acted on or not, I administer the more or less purgative forms of such salts. The citrate of potash answers remarkably well merely to produce an alkaline urine, and the tartrate may be added in due proportion two or three times during the day, should it be necessary to relieve constipation. This plan, with the addition of anodynes at night, is all we can well do in cases of calculus, and the bladder will sometimes be so relieved by it, that patients may lose most of their symptoms, while those remaining will be greatly mitigated.

There is a point connected with the administration of these neutral salts well worthy of attention. The decomposition occurring after they enter the stomach being productive of a supercarbonate of the alkaline base in the urine, we produce a fluid in the bladder possessing peculiar chemical qualities. Thus while, on the one hand, uric acid is soluble in such a menstruum, we also know that the earthy phosphates will dissolve in it—a double property long sought for by those who would effect the solution of calculi in the bladder.

I do not put this forward as the discovery of a means of effecting the solution of vesical calculi; but it is impossible to shut one's eyes to the fact, that an urine kept constantly under such chemical conditions must inevitably be exercising a solvent action, both on the uric and phosphatic ingredients of calculi, every minute of the day. The plan, moreover, is one which renders the urine soothing to the mucous membrane, and this is an important indication to answer. I would entreat my surgical brethren who are so constantly treating calculous cases, to use the alkaline citrates freely. It is to them we must look for results as to the efficacy of the remedy in exerting this solvent action on urinary concretions. Of the great value of the plan, after the operation of crushing, I am perfectly satisfied.

I shall not enter on a consideration of the methods which have been proposed at different times to disintegrate calculi while in the bladder by electrical decomposition. These propositions have for the most part originated with physicians. The late learned President of this College was the first to make allusion to the possibility of this being affected. Since he wrote others have taken up the subject. Thus we find in Dr. Pereira's "Materia Medica," 3rd edition, p. 47, the following statement:—"Bonnet suggested that the bladder should be injected with a solution of nitrato of potash, and the calculus subjected to the action of electricity in this liquid, in order that the nitrate may be decomposed into nitric acid and potash; the former of which, it was suggested, would dissolve the phosphates, while the latter would dissolve the uric acid and urate of ammonia."

The above view has since been taken by Dr. Bence Jones, and will be found in a paper lately published in the "Royal Transac-
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Micturition, spoken of in this connection, is a term which has always excited a little wonder in the presence of a physiological audience. It signifies the act of urinating. Inasmuch as the bladder is an organ which contains a viscus, it is interesting to consider the circumstances attending its presence. Of all the organs of the body, the bladder is perhaps the one which has been most frequently described, and yet we do not know its true nature. The bladder is a bag-like organ, containing a viscus, which is emptied by the catheter, and the whole of the urine being thus drawn off, the operation may be performed again after a few hours. The viscus, thus freed from the presence of an irritating fluid, often recovers its natural condition; but while this is doing we always improve the condition of the inflamed mucous membrane, by keeping the secreted urine alkaline, and the citrate of potash may be advantageously administered at intervals. Much has been said of the benefit derived from strychnia and the various preparations of nux vomica, in assisting the paralysed bladder to recover itself. Inasmuch as strychnia is an excellent tonic, it may sometimes do good in judicious hands; but I am not much inclined to believe in its possessing that power over the bladder of which some have spoken so highly.

With respect to the second class of causes productive of frequent micturition, many of them consist, as I have already shown, in the presence of diseases bearing a very general relation to therapeutics. Thus diabetes insipidus and mellitus, and albuminuria frequently cause the symptom. Of these diseases I need only remark, that the remedies best suited to their relief are those which will most benefit the bladder, by lessening the discharge of urine, on the one hand, and, on the other, decreasing the proportion of albumen contained in it. The other causes described, consisting in the presence of hardened feces in the rectum, and inertness of skin from exposure to cold, need no remark, the treatment being sufficiently obvious. I would say a few words, however, as to the management of calculus in the kidney, when it is keeping up sympathetic bladder irritation. When we have a patient in this plight, we hope for the passage of the calculus as the most desirable termination of the case, and our treatment should therefore apply to the fulfilment of that end. How is this to be effected? Our object must be to lessen spasm, and to prevent the concretion increasing in size. Alkaline treatment is here
most valuable. The citrate and tartrate of potash or soda, exhibited at intervals during the day, are not only theoretically indicated as neutralisers of the urine, the acidity of which must irritate the inflamed renal structure, but the action of these remedies, in producing a supercarbonate of the alkali in the urine, is just what we require in order to dissolve the uric acid or phosphatic earthy deposit, and to prevent its increase. I have now been in the habit of recommending this treatment for some few years, and, where it has been carefully carried out, have been much gratified with the result. In several cases it has appeared to facilitate the expulsion of the concretion; and in one or two instances, where the urine has been carefully watched, there has been no return of the disease.

In inveterate uric diathesis, where calculi are constantly forming, this plan of treatment may not always gain credit. The calculi already formed may come down as before, and it may not be easy to impress our patients with the soundness of our views when they observe as many calculi as ever entering their urinary canals. The benefit has, however, been to me sufficiently obvious, and I am convinced that it is the only true mode of combating the calculous tendency.

When speaking of calculus in the bladder, I alluded to the chemical effects produced by the alkaline supercarbonates, and I may here relate the manner in which any one can assure himself, without difficulty, of the power they possess of effecting the solution of earthy phosphates. I need say nothing of their action on uric acid.

If we take recently precipitated earthy phosphate, and wash it, and then pour upon it a solution of bicarbonate of soda, allowing digestion to go on in the cold, with occasional shaking, we find that the bicarbonate will dissolve a very notable quantity of the phosphate. This may be shown by boiling the filtered solution, when the earthy salt will fall as a precipitate.

I have next to notice the treatment of hysterical subjects complaining of frequent micturition. Of the pseudo-cases described, little need be said. They require moral management, and some diversity of opinion may exist as to the best course to pursue. Were I to advise, I should say, when you have satisfied yourself that they are deceiving you, tell them privately that they are doing so, and advise them to get out of the scrape by gradually acknowledging themselves cured by remedies which you propose to administer. In this way they are saved from exposure, and by thus compounding with their mendacity, they may be induced to give up such practices for the future. Of course, when this plan is adopted, it is right some responsible member of the family should be made privy to the scheme and the rationale of its action.

If hysteria be really complicated with irritable bladder, we have the means of doing much good. When describing this state, I
alluded to the fact that it was not necessary a large flow of urine should occur, in order to produce the symptom of frequent micturition. It would appear that in some cases the skin refuses to act altogether, and nearly the whole of the water discharged from the system has to find its way through the kidney. This may be owing to the feeble and irregular state of the circulation observed in hysteria, and here the irritability may be removed by tonics and stimulants; and when the skin begins to act, as a result of the restoration of action to the extreme vessels, the symptom ceases.

In other cases less aggravated, it would appear that though the skin maintains the power of excreting water, it loses that amount of energy necessary to render it an emunctory of the more solid constituents of the blood. In this way, the excretion of extractive and other matters is thrown more fully on the kidney, and the urine is apt to become abnormally acid. Here we have an important indication to fulfill, and it becomes necessary, while we administer tonics, that we should render the urine of an unirritating character. The use of the citrate or tartrate of potash or soda will here also do all we require, and they may be advantageously administered in combination with antispasmodics. Of these, assafetida is perhaps the best. It is a disagreeable remedy, it is true, but great benefit accrues from its administration. The cutaneous surface, as we well know, is rendered active during its ingestion, the perspiration possessing the odour of the drug in a marked degree. The kidney, under this treatment, has less acid to excrete, and the irritability of the mucous surfaces is thus lessened. The best form for this unpalatable drug is in pill, and five grains may be given three times a day with each dose of the saline remedy.

[London Lancet.

New Views on the Physiology of the Large Intestine. By M. F. Colby, M. A., M. D., etc., Stanstead, C. E.

It is now more than eighteen months since I discovered the error in the received physiology of the function of the large intestine, particularly in that part of it called descending Colon, Sigmoid flexure and rectum. Every day’s observation since has confirmed me in the correctness of my views. Although I have not been able to engage in general practice, I have had numerous opportunities of testing them as to their bearing on pathology. The knowledge of the true function of the descending bowel does away with all the uncertainty complained of by medical men as to the effect of cathartics, and more particularly of enemas, in many cases. A discussion took place in the Westminster Medical Society in 1833, which is reported in the London Lancet. The discussion developed one fact, that there was a consciousness among all present that there was something not satisfactory in the received
physiology; which led off the question to the anatomists present, whether there was anything in the anatomical structure of the descending bowel which could operate as a valve?

I can demonstrate the received physiology of the function of the descending bowel to be untenable, and that it implies the charge that the Creator has left a defect in the organization of a particular part, which renders it inadequate to the performance of the function assigned it. My new physiological doctrine recognizes two distinct apparatuses, each possessing peculiar and distinct functions over and above what is recognized by the old system. These functions were supposed to pertain to that apparatus called the large intestine, and heretofore assigned to the function of organic life, assisted by the voluntary co-operation of the abdominal muscles.

As to the purport of my new physiological doctrine, I quote from lectures which I am preparing illustrative of the subject, the following recapitulation:

1st. I assume that the organic function of the colon ceases at its left transverse extremity.

2nd. That the portion called descending colon and sigmoid flexure has a separate and independent function.

3rd. That this portion of the bowels is anatomically inadequate to the performance of the function heretofore assigned it.

4th. That this portion constitutes the link between the animal and the organic life. That it is possessed of both animal sensibility and contractility to such an extent as to entitle its functions to be considered those of animal life.

5th. That although it is to a certain extent subject to the will, and can be brought into action at any moment by it, yet it has an independent instinctive life which gives it an influence and a power which neither its organic or its animal life could give it.

6th. I assume the name of curator as proper to express its function; and as it is a dualite acting under its instinctive life, at times in a separate capacity, I give the name curator superior to that portion above the superior spinous process of the ileum, and which for the time is devoted to the functions of organic life; and curator inferior to the portion below, usually called sigmoid flexure—this for the time being devoted to the functions of animal life.

7th. That the curator, when acting as a unit, occupies the post of observation between the two lives. That it takes cognizance of the time when the digestion and the nutritive absorption is completed in the small intestine; that it then opens the ileo-colic valve, and at the same time by a succitive and expansive action it takes the faecal matter from the transverse colon and conveys it to the rectum, which it aids the levator ani muscles to raise, and by a divergent action of its two longitudinal muscles it opens to receive the same. The curator by its instinctive power, recognises the fitness of the rectum to receive and expel the faecal matter simul-
taneous to the opening of the ileo-colic valve; it also at the same time brings into action the abdominal muscles, by which the contents of the small intestine are pressed forward to supply the place of the refuse matter removed from the colon. Its office is therefore not only prehensile in taking the faecal matter from the transverse colon and conveying it to the rectum; but it exercises the conservative function of keeping the ileo-colic valve closed till such a time as the absorption of all nutritive matter from the contents of the small intestine renders its closure no longer necessary.

8th. That the rectum is part of an apparatus which I call rectal, and which is wholly under the domain of the will; that it exercises the function of defaecation, and aids in that of urination and parturition. In its anatomical structure it is analogous to that of the upper part of the digestive tube with the difference of the reversion of the sphincters. It consists of the strongest muscular portion of the bowel; the rectum, with its muscles; the two sphincter, the levator ani, the coccygei, etc. The same looseness of the cellular tissue, which connects the muscular coat of the oesophagus, is found between these coats of the rectum.

9th. That the power of the will extends over that part of the digestive tube which extends from the mouth to within two or three inches of the cardiac orifice of the stomach; so also the power of the will extends from the external sphincter ani to within two or three inches of the left transverse extremity of the colon.

10th. That the rectum in that abnormal state which results from phlogosis of its muscular coat, has its contractility exalted so as to cause it to act antagonistically to the curator. This is the most frequent cause of constipation and its consequence. When this contractility becomes spasmodic this resistance leaves the curator to mechanical forces—hence results accumulations and distension of its weakened side walls. It is this abnormal state of the most sensitive part of the digestive tube which fills the hospitals with the insane. It is also in this state that the curator, by its instinctive life, acts as a dualite by a peculiar transposition which gives it a great power in overcoming the resistance of the rectum.

11th. The ileo-colic valve may have its functions suspended by local disease, as well as by peritoneal inflammation; but the most frequent cause is the suspension of the function of the curator, which may arise from antagonism from the abnormal state of the rectum, or from a phlogosed state of its own mucous membrane. A sudden closure of the valve would cause tympanitis, ileus or strangulated hernia. A weakened or too active state of the valve would result in emaciation from the premature passing of the nutritive matter. — [Montreal Medical Chronicle.]
On the Use and Abuse of Pessaries in Prolapsus. By Dr. Gibson.

Of all the displacements of the uterus, prolapsus is unquestionably the most common. We may go further, and say, that of all diseases of married women, prolapsus uteri is the most frequent. Nevertheless, it is only where the displacement is great that much inconvenience is felt, as a general rule; and usually the prolapsus has been in existence a considerable period before the descending uterus has advanced far. Prolapsus vaginae is not a common disease, without a greater or less amount of descent of the uterus, and probably never occurs extensively without displacement of the bladder, or rectum, or both. When the uterus has descended from its position at the brim of the pelvis, the abdominal contents press upon the organ as they did before its descent, and the pressure of the abdominal muscles is rather increased than the contrary. Vaginal cystocele and vaginal rectocele are almost invariably associated with tumors, and as the vaginal prolapse increases, the cul de sac (formed by the rectum or the bladder, as the case may be) is also increased, and ultimately it becomes difficult to empty the rectum or the bladder completely. Hence it is palpable that the tendency of these displacements is from bad to worse. The facility with which the early progress of prolapsus uteri may be checked by pessaries and the like, has undoubtedly exercised a baneful influence upon the study and treatment of the disease, whilst with many practitioners the unhappy results of the indiscriminate employment of the pessary have had the effect of removing this instrument from their practice altogether; and I venture to submit, that the indiscriminate use of the pessary is greatly more injurious than its disuse altogether. One bad consequence of the use of the pessary is the amount of irritation set up by its persistent pressure—irritation in the walls of the vagina, in the bladder, and in the rectum. Another is the expansion of the vagina consequent upon its continued pressure; from hence results excessive dilatation of the vaginal tube, relaxation of its coats, excoriation, leukorrhoea, &c., &c. Another effect, and often the most serious of all, is the pressure of the pessary upon the os and cervix uteri; hence the production here of inflammation, ulceration, hemorrhage, and a whole host of evils. Still it is undoubtedly true that, by careful management, the pessary is a most useful instrument. I recommend a pessary, which, I think, will obviate many of the objections urged against its use—light, clean, compressible, cheap—the vulcanized india-rubber ball, used as a toy by children, having a peg at the aperture and a loop for easy removal. This, with a well-adapted bandage externally, will relieve very many cases of prolapsus. An excellent pessary is made of sponge, with a loop of tape passed through it for its easy withdrawal. It should be somewhat excavated before and behind, and may be (where large size is a great objection in introduction,
dipped in a solution of gum, and compressed by tape or twine, as in the ordinary manufacture of the sponge tent. When dry, and the compressing tape or twine removed, and the surface smoothed with a sharp knife or scissors, it is duly oiled, and passed into the required position into the vagina. The medicated pessary is much neglected, and may be made to fulfil very many indications; indeed it is self-evident that the persistent application of any given medicinal agent must be vastly more influential than the brief application of such agent by way of injection, the ordinary form of application. The sponge pessary may in this wise serve a double purpose. I say nothing of recumbent posture, cold sponging, or bathing, food, air, exercise, tonics, aperients, &c., my experience in these matters differing little from that of almost all modern writers upon the subjects under consideration. My experience of the use of caustics—chiefly nitrate of silver—to the walls of the vagina, is not satisfactory; in mild cases they are, for the most part, not indicated, and in the severe forms they appear to me unequal to the requirements of the cases. I have in a few cases applied solutions of iodine in chloroform, ether, &c., to the vaginal surface, but here also I have not met with any commendable success.

Everything considered then—the progressive tendency of the diseases from bad to worse—the acknowledged difficulty in their treatment, their frequency, &c.—it becomes desirable to know whether other means, beyond those ordinarily employed, are not to be found, which shall relieve or cure those forms of disease which have resisted ordinary treatment. The agency of the knife has not had fair scope, and this principally from two causes. 1. The repugnance of the patient and the practitioner to such active treatment of these delicate organs. 2. The possible destruction of these organs as agents in copulation and parturition. The first objection need not be combated here by me; and the second is more ideal than real. It is, indeed, true that the passages have been extensively interfered with, as in the case to which I shall, in a moment, direct your particular attention. But it is also true, that in many instances well fitted for operative interference, the genital canal will admit of very extensive contraction without detriment, or with little detriment to copulation or parturition—that these objections very often do not hold, as in the aged and in the widowed—and that the distress of the disease is often so great, that copulation and parturition are entirely out of the question.

Operative interference may be, and has been, varied much by the caprice of the operator, or the requirements of the patient; but it may be stated, generally, that the aim of operators, hitherto, has been to produce contraction in some part of the genital canal. Dieffenbach removed an oval piece of mucous membrane from the side of the vagina, and brought the edges of the wound together by sutures. Baker Brown performed a somewhat similar opera-
tion, but on a smaller scale—and then, in addition, pares the edges of the labiae inferiorly, and brings the raw surfaces together. The latter part of Baker Brown's operation has been alone performed; and all have been attended with a measure of success. I have performed two operations with the knife and ligature, for the relief of these affections. One, which has been performed by many others, consists of removing strips of mucous membrane from the sides and back of the vagina, and bringing and sustaining the edges of the wounds in contact, by means of sutures. This operation has been successful with me, but I have only performed it once.

The operation to which I desire particularly to direct attention, has not been, so far as I am aware, performed by any person except myself. The patient had suffered for sixteen years from prolapsus uteri, and for several years, from vaginal cystocele and rectocele, and had undergone treatment of various kinds, from time to time. Moreover, a fibrous-pediculated tumor, one inch and a half in length, was found attached to the posterior lip of the os uteri; this was easily removed by ligature and the bistoury. The patient was afterwards confined to the recumbent posture for a few days, and then the operation for the cure of the prolapsus was performed. The patient being placed in the ordinary position for lithotomy, and the genital canal fully exposed, an incision was carried from the medium line—posteriorly (about two inches and a half above the posterior labial commissure) forward, beneath the arch of the pubis, to the margin of the labium anteriorly on each side; from these points downwards the vagina and vulva were completely denuded of mucous membrane by a careful dissection with the scalpel. This part of the operation being satisfactorily completed, three interrupted sutures brought and retained the lateral halves of the upper lines of incision together. Two other interrupted sutures were inserted into the anterior margin of the denuded surfaces, whilst three deeply-placed quil sutures kept the lateral masses firmly in contact. The patient was then removed to bed, and a mild opiate given.

The urine was regularly drawn off twice a day for the first ten days. The bowels were acted upon by enema on the third day. Considerable inflammation resulted from the operation, but ablation with warm water, injection of the vagina by means of a syringe and catheter with warm water, a rigid observance of the horizontal position, and simple food, were found equal to the requirements of the case. The first suture was removed on the seventh day, and on every second and third day from this date another suture was removed. The patient rose from her bed on or about the twenty-first day, and gradually, from this time, assumed the active duties required of her by her household. At the present hour she is quite well.—[Newcastle and Gateshead Path. Transactions, and Ranking's Abstract.
On the Preparation and Therapeutical Employment of Subcarbonate of Bismuth.

The following is the mode of preparation of the subcarbonate of Bismuth described by M. Hannon, Professor at the University of Brussels. The bismuth is first purified by melting this metal in powder with ten times its weight of powdered nitre. After cooling, the metal is again powdered and mixed with ten times its weight of nitre, and after a second fusion the bismuth may be considered as entirely free from the arseniurets and sulphurets which it almost always contains. Then three parts of nitric acid are put into a retort, and one part of pure bismuth is added. When the reaction is complete, about a third of the liquid is evaporated, then the solution is poured drop by drop into a solution of carbonate of soda, and a white precipitate is obtained, which is subcarbonate of bismuth. The precipitate, after having been washed five or six times with distilled water, is thrown upon a filter, and washed again to remove the last traces of carbonate of soda. It should be preserved in well-stopped bottles. The physiological properties of the salts of bismuth are very little known, for the simple reason that the subnitrate is the only salt which has been employed in medicine. The operation even of this salt is not well understood, as its insolubility offers an obstacle to the observation of the physiological phenomena which might have been observed in the other salts of bismuth, such as the citrate, the tartrate, or the carbonate. It is also the insolubility of the subnitrate which renders it inefficient in the greater part of the cases in which it is indicated; and it also occasionally produces a very inconvenient sensation of weight at the stomach. The subcarbonate is soluble in the gastric juice, its action is rapid, it produces no sensation of weight at the stomach, it rarely constipates, colors the stools less than the subnitrate, and may be employed for a long time without oppressing the stomach. The action of the subcarbonate appears to be sedative during the first days of its employment, and subsequently to excite all the phenomena which result from the action of the tonics.

As to its therapeutical action, it may be noted that all cases of gastralgia consecutive upon phlegmasia of the digestive passages, cases in which the tongue is red and pointed, and cases in which the digestion is laborious and accompanied with putrid or acid eructations, or in which there is a tendency to diarrhœa or spasmodic vomiting, demand the employment of the subcarbonate of bismuth. This salt is also required in the vomiting of children, whether caused by dentition or succeeding to frequent fits of indigestion, and in the diarrhœa of weak children, especially when occurring at the time of weaning. One great advantage possessed by the subcarbonate of bismuth is, that it neutralizes the acids in excess which are found in the stomach. The subnitrate, as is well
known, fails always in this respect. In all the cases where the subcarbonate has been taken, the pain in the digestive passages is first found to disappear; then the eructations cease, together with the vomiting or diarrhoea; the digestion becomes less and less laborious, the tongue gradually receives its normal form and color; and if the use of the subcarbonate is continued, the appetite increases from day to day, the yellow tint of the countenance disappears, and the face becomes colored at the same time as it ceases to be shrivelled.

The subcarbonate of bismuth is perfectly insipid, and excites no repugnance. It is given before meals. Adults take it in a little water, and children in honey. It may also be made into lozenges. The dose for adults is from one to three grammes, taken three times a day in increasing doses.—[Bulletin de Thérapeutique, and British and Foreign Med. Chir. Rev.

On a Case of Diabetes treated by the Use of Rennet. By Dr. Iversen.

Dr. Iversen relates the case of a patient, in the lower class of life, who had well marked diabetes, who was treated with rennet, and the details of whose case were carefully recorded day by day. As all the usual plans of treatment had been unsuccessful before the patient's admission into the hospital under Dr. Iversen's care, he made an experiment of the rennet treatment. In order to obtain as accurate a result as possible, it was determined, in the beginning of the treatment, not to alter the diet of the patient, except to recommend the greatest possible abstinence from drinking. By the table prepared by Dr. Iversen, the treatment seems to have been successful in diminishing the quantity of sugar in the urine; but from some circumstances which are not explained, the patient was seized suddenly during the progress of the case with fainting, followed by spasms, ending in death. No post-mortem examination was permitted, and the case is therefore imperfect. Notwithstanding the unfortunate result, Dr. Iversen considers that the constant diminution of the urine, both in its actual quantity and in its saccharine ingredient, was very remarkable. He shows that in the first four days, during which the patient took no medicine, the average quantity of urine voided, amounted to 10:108 cubic centimetres. In the following period of seven days, during which she took the rennet, the quantity of urine reached only 7:927 cubic centimetres, with a quantity of sugar amounting to 324 grammes. In the next five days, during which she took the rennet in combination with phosphate of soda, the average daily quantity of urine sank to 6:988 centimetres, with 250:317 grammes of sugar. The patient herself attributed to the rennet the power of allaying in some measure the burning thirst which she experienced.—[Archiv. des Vereins für Gemeinschaftliche Arbeiten, and Ib.
In selecting the following short report, we call attention to the fact that a lesion of a nervous centre here produces symptoms of chorea. This case rather corroborates our remarks at the end of Dr. W. C. Brandon's case in the original department of this number of our Journal, page 585. Since Dr. Brandon's case, with our remarks, have been in print, we have had the opportunity of witnessing a case resembling his in many points, and especially in the Chronic symptoms.

Miss F., aged about 68 years, fell from her bed on the morning of the 11th inst. Dr. R. Campbell visited her some hours after: found her perfectly rational, and able to give an account of the accident in intervals of spasms. Her head was bent forcibly forward and rested upon her knees. She was convulsed almost uninterruptedly in her arms and lower extremities, but more violently in the left arm. There was a severe contusion on the left side of her head and face.

By the use of sedatives and quinine with brandy, the general spasmodic symptoms were arrested. She became apparently much relieved, ate with appetite, and conversed rationally and composedly, but the spasmodic action of the left arm never abated, except during sleep, from the time of her fall till her death, which occurred on Saturday, 19th inst., by gradual sinking, eight days after her first attack. Her mind, from first to last, did not manifest the least aberration whatever.

On Tubercle of the Crus Cerebelli, with symptoms simulating Chorea.

By T. H. Shute, M. D., Physician to the Torbay Infirmary.

As any case tending to elucidate the physiology and pathology of the brain is of importance, I send the following, thinking it presents many points of interest to the readers of The Lancet:

Elizabeth S——, aged twenty-six, married three years, no family, was admitted under my care March 11th, reported to be suffering from chorea. She presented the following appearance:—Countenance not sunken nor pallid, and not evidencing pain; features not distorted; muscular and adipose tissues sufficiently developed; tongue furred, protruded with a jerk; head constantly moving to the left side; articulation very imperfect; understands and answers everything that is said to her; constantly talking whilst awake; left arm in perpetual movement, being jerked across the chest (during sleep the convulsive movements cease, and she is quite tranquill); total inability to support herself on her legs; but she can move them up in the bed; sensation not affected; has a
constant short cough, as if caused by accumulation of mucus; pulse 90; urine acid; no albumen. There was much difficulty in examining the chest. Left side appeared duller than right; mucus and subcrepitary rales, with respiratory sounds of the diffused blowing type, on that side.

The history of the case was very obscure. We could not ascertain that she had ever complained of headache; had had occasional cough for two years; had never spat blood. Four months since, whilst out walking, she suddenly fell against a wall, but without loss of consciousness, since which time she has been in her present condition.

Diagnosis.—Organic disease at the base of the brain, probably softening, near the pons Varolii; tubercular disease of the left lung. She was ordered blisters to the calves of the legs; compound ipecacuanha powder, ten grains.

March 12th. The Dover's powder had been repeated, and at the period of the visit she was in a profuse sweat, and in a quiet sleep; the movements of the arm had ceased.

13th. Still quiet; takes her food when roused.

14th. Very noisy; movements of arm and head have recommenced. Ordered, acetate of morphia, potassio-tartrate of antimony, of each one grain; water, one ounce; one drachm to be taken every three hours till she was quiet.

16th. Only two doses of mixture had been taken, and she was in such a state of prostration as to require brandy and ammonia to rouse her.

16th. Recovered from the state of prostration; movements of arm had ceased, and did not return; right pupil dilated, contracts under the influence of light, but dilates again immediately.

She died on the 6th of April.

Autopsy, forty-eight hours after death.—Vessels on convexity of brain congested; arachnoid membrane adherent along the upper and posterior edge of the longitudinal fissure; no evidences of recent inflammation of the membranes; consistence of brain firm, somewhat congested; no effusion into the ventricles; in slicing downwards, no appreciable lesion discoverable. At the base of the brain the right crus cerebelli was softened to the depth of a line on its anterior aspect, and in its substance were imbedded three crude tubercles the size of a pea, one in the centre, and two on each side, forming a triangle. The lungs were not taken from the thorax, but the posterior portion of the left was infiltrated with crude and softened tubercles.

Remarks.—The diagnosis in this case was somewhat obscure. On the one hand, we had all the symptoms of chorea, such as the constant agitation of the arm and head, the jerking protrusion of the tongue, difficulty of articulation, and perfect quietude during sleep. On the other hand, the age was not that at which chorea commences in the great majority of cases, and the mode and sud-
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denness of the invasion of the malady was opposed to the idea of its being a purely nervous affection. Therefore we came to the conclusion that there was organic lesion, and that its seat was the base of the brain, which was verified by the autopsy. The deposition of tuberele in the brain of the adult is very rare, though common in children; "so much so that Louis only met with one case in 117 cases of phthisis; and Ingol, in his extensive practice at St. Louis, has only met with eight cases, and in six of these no symptom existed during life."—(Solly.) It will be remembered, that in the experiments of Magendie, when he divided one of the crus cerebelli, the animal immediately began to rotate to the same side. Now here, although the patient in all probability fell sideways against a wall, the perpetual movement of the arm took place on the opposite to the diseased crus, the fibres of which were all but destroyed by disease; but the case is confirmatory of the proposition, "that individual parts of the brain answer individual purposes, as regards the power of regulating our movements."

[London Lancet.

On the Age in which Hysterical Affections are most likely to be developed. By Dr. Briquet.

Dr. Briquet passes in review the doctrines taught by various writers on the subject of the occurrence of hysteria, and then analyzes a series of 467 cases occurring in his own practice in the course of ten years, in which the commencement of the affection was carefully noted. Some of his inferences would probably not be universally adopted, but his numbers are important, the more so as they are in the main corroborated by the analysis of numerous cases collected by Dr. Landouzy, whose results are also given in the following table:

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<tr>
<th>From birth to 10 years</th>
<th>Landouzy: 0 cases</th>
<th>Briquet: 61 cases</th>
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<td>10 &quot; 15 &quot;</td>
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</tr>
<tr>
<td>55 &quot; 60 &quot;</td>
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Dr. Briquet attributes the differences that are manifest between his table and the numbers given by Dr. Landouzy to the circumstance of his having exercised great care in determining the exact commencement of the disease. The following are his chief conclusions:

1. A considerable number of cases of hysteria occur while the sexual organs are yet in a rudimentary state.
2. The development of hysteria does not bear a direct ratio to the period of activity of the sexual organs, as this period commences at eleven or twelve years, and does not cease till the fortieth or forty-fifth year. On the other hand, hysteria progressively advances up to the age of twenty, and very rapidly diminishes from the twentieth to the forty-fifth year. Consequently, of thirty-four years of sexual activity, there are only from nine to ten during which hysteria prevails, while it becomes less frequent during the remaining twenty-four; and yet the sexual activity is greater from twenty to forty-five years of age.—[L'Union Médicale, and Med. Chir. Rev.

We find the following short article in the Eclectic Magazine, a journal which we here take occasion to commend to our readers as one of the best, if not the best literary journal in the world. We have several times transferred from its pages valuable matter, which, though intended for popular reading, will be found to possess much interest to the Profession. Such an one appears to us in the following extract from a pamphlet on Fever Poisons.

Fever Poisons.

[On the subject of Scarlet fever, which has been lately making extraordinary havoc among old and young, the following useful observations occur in a small tract intended for popular dissemination by Mr. R. Pairman, surgeon, Biggar.

After referring to the value of thorough ventilation, light, and cleanliness, in order to disinfect clothes and apartments from the invisible air-poison exhaled from the sick, the author proceeds:—

It is important to know regarding infection, that when not destroyed or dispersed in the sick room, it attaches itself and adheres with great tenacity to all articles of furniture—chairs, tables, drawers, &c., nestling in their innumerable pores; and unless these articles be scrubbed with a solution of chloride of lime, or exposed to a strong heat, or a free current of air for several hours, it may again become evolved, more virulently than at first, after the lapse of many weeks. But it chiefly adheres to cotton and woollen materials. The patient’s body-clothes and blankets become saturated with it, like a sponge with water. And in airing these materials, a mere passing breeze is not always sufficient to carry it away. A gentle country family lately related to me that, a few years ago, they had occasion to reside some time in Edinburgh; while there, one of the domestics became affected with fever of a peculiar type. After her recovery, the bed-clothes—as was thought—were sufficiently aired, packed up, and conveyed home along with the family. Through some inadvertance, they remained for four months thus
folded up; after which, being required for use, they were opened out and washed. Within a week, the person who washed them became attacked with the same type of fever, though none was prevailing in the district at the time; so that infection thus imprisoned in a blanket, or anywhere else, and not exposed to any current of air, seems not only quite indestructible, but, while thus confined, probably grows in virulence every day. Thus the infection of plague—which is just a form of typhus fever—has been packed up in a bale of cotton, and after being conveyed many hundred miles, struck with instant death the person who unloosed it. The following curious and dreadful incident, related by Dr. Parr, of Exeter, showing how plague was once disseminated in an English town, we extract from Macauley's Dictionary of Medicine: "The last plague which infested the town in which we now write, (says Dr. Parr,) arose from a traveller remarking to his companion, that in a former journey he had the plague in the room where they sat. 'In that corner,' said he, 'was a cupboard where the bandages were kept; it is now plastered, but they are probably there still.' He took the plaster, broke down the plastering, and found them. The disease was soon disseminated, and extensively fatal."

The next point requiring notice is, that one man may convey infection to another, while he himself escapes the disease. Some years ago, I received a message from a much esteemed and worthy minister, requesting a visit to two of his children. On arriving, I found them ill with scarlatina; and as they had both become suddenly affected at the very same hour the previous evening, it was evident that both had simultaneously imbibed the poisonous dose. But the question arose: Where could they possibly get infection? or they had ever been carefully tended by their nurse, come in contact with nobody but members of the family, and no fever of any description was prevailing for several miles around. At length the father remembered that about a week before he had visited a little girl under scarlatina in an adjoining parish; had, in the act of engaging in religious conversation, sat by her bed, aken her by the hand, rubbed his clothes on the bed-clothes of the patient—in a word, had quite unconsciously done everything likely to saturate his own clothes with infection; after which, the night being cold, he wrapped his great-coat firmly around him—hus inadvertently preventing its dispersion—mounted his horse and trotted home at a rapid pace. On reaching home, he threw off his great-coat, drew in his chair to a comfortable fire, and as my fond parent would be apt to do, forthwith got both of the children perched upon his knee, little dreaming of the poisonous present a father's love was unconsciously bestowing. That this was the mode of communicating the disease was evident by a process of exact calculation; for the infection of scarlatina lurks in the blood about five days before the fever shows itself; and on
calculating five days back from the onset of the fever, we were brought exactly to the time when the incident occurred.

If two pieces of cloth of the same material, the one black, and the other white, were, in equal circumstances, and for the same length of time, exposed to infection, the black cloth would be far sooner saturated with it than the other. We have here something analogous to the well-known law about the absorption of heat. As dark objects absorb heat more powerfully than white ones, so do they also more readily absorb infection, and all kinds of smells. Hence the mere fumigation of closes and wynds in epidemic seasons is not enough; they are afterwards very properly whitewashed. Hence also the wholesomeness of light as well as air in the dwellings of the poor, and of all those measures of cleanliness and comfort which the whiting-brush is able to impart. The haunts of infection realize those conditions with which child-ish fancy clothes the haunts of spectres. Dark and cheerless are its favorite dens. The “bleezing ingle and the clean hearth-stane,” it seems to shun; but lurks and lingers in the gloomy hovel, fattens on its dirt, and in the crevices of its smoked and dingy walls finds those most congenial nestling-places which it cannot find in the plastered, whitewashed, smooth and shining walls of cleanliness. Its fittest emblem is that mysterious plant, the deadly nightshade, which loves the darkness rather than the light, and luxuriates less abundantly in sunshine than in gloom.

Use of Chloroform in Retention of Urine.

An intemperate cabman, aged 52, was admitted into a medical ward at Guy’s a few days ago, on account of chest symptoms. It appeared that he had had gonorrhoea twelve years before, and had ever since had more or less difficulty in passing his water. After having been in the hospital nearly three weeks, he was seized with retention of urine. The dresser and house surgeon made patient and repeated attempts to pass a catheter, but without result. There was little doubt that the stricture was a permanent one, which had been closed by inflammation. In February the retention had become complete for two days; the symptoms were becoming very urgent, and Mr. Cooper Forster was accordingly called to see him. Opium had been most freely given. Having failed in persevering attempts to introduce a No. 2 catheter, Mr. Forster determined to administer chloroform, and, if needful, to puncture the bladder by the rectum. When completely insensible, another trial was made with a No. 3, which now passed most readily. We cite this case as important, because it proves beyond dispute the influence of the anaesthetic state in relaxing an otherwise impermeable stricture. An opiate treatment had been fairly tried before, and had failed, and the catheter had also been found useless in the hands of sev-
eral well practised surgeons. The plan of administering chloroform in cases of obstinate stricture and retention, is one in wide use, both in hospital and private practice; but, as it is not yet in such general favor as it deserves to be, we have thought that so pointed an example of its advantages might be worth bringing before our readers.—[Med. Times and Gazette.

EDITORIAL AND MISCELLANEOUS.

Professor Eve's Report.—In consequence of the severe illness of his son-in-law, Dr. Walton, while away from home, Dr. Eve was compelled to be absent in North-Carolina, just at the time when his Report was partly in type, and thus its preparation for publication was interrupted; which we greatly regret, both on account of the cause—our friend's illness—and the effect it has had, of depriving us of the continuation of this paper. We take pleasure in informing our readers, that Dr. Eve and Dr. Walton, have both returned home—the latter improving in health—and that, we hope, to furnish them with the remainder of that valuable document in our next number.

Dr. J. F. E. Hardy.—In the above connection, we esteem it a privilege to be able to record an instance of professional courtesy and brotherly love, which even in our courteous, liberal and loving profession, has met with few parallels. Dr. J. F. E. Hardy, near Ashville, N. C., was called to see Dr. Walton, a perfect stranger and unconnected, save by the bands of Medicine; he removed him from his hotel to his home, with the tenderest care, where he watched over him with paternal solicitude—he and his kind family anticipating every desire of the sufferer with lavish generosity, and supplying the places of home and of friends in the nearest significance of those, to an invalid in a strange land, most endearing terms. We learn, that this noble and philanthropic man, whom we are proud to call brother, was prevented from even accompanying Dr. Walton, on his way home, only by a press of business.

Professor Juriah Harriss.—At the close of the last course of Lectures in the Medical College of Georgia, Dr. Harriss, at that time Prosector to the Professor of Surgery in this Institution, was elected to the Chair of Physiology in the Savannah Medical College, vice Professor Martin, resigned. The above change occurred just about the time of our assuming editorial charge of this journal, and has thus, till now, passed unrecorded by us. Our friend, Dr. H., is well known to the readers of this journal by certain able Surgical and Physiological papers in its former volumes.
Physiology, we believe, was ever his favorite branch, and we congratulate our friends, his colleagues, upon being able, so promptly and satisfactorily, to fill the breach made by the resignation of Prof. Martin.


This is a new edition of Dr. Montgomery's well known work on the Signs and Symptoms of Pregnancy, carefully revised and considerably enlarged; with a number of able essays on important subjects connected with obstetrics.

We do not think it is claiming too much for this work to say it is the very best in print on the signs and symptoms of pregnancy, and that it is as perfect as a book well can be. It is only to be regretted that the American edition has not the beautiful colored plates, shewing the successive changes in the areola caused by pregnancy from the third to the ninth month, which are found in the original English work; but a very good reason is assigned by the American publisher.

The first eight chapters are devoted to the signs and symptoms of pregnancy.

The subjects of the other five chapters are:

"Chapter IX.—Examination of Substances expelled from the Uterus.—An early Ovum.—Decidua.—Moles.—Hydatids.—The Membrane formed in Dysmenorrhoea, and in other Conditions of Uterine Derangement.—Membraneous Formations from the Vagina.

"Chap. X.—Accidental Circumstances.—Idiosyncracies.—Beccaria's Test.—State of the Blood, Urine, and Pulse.—Kyestein.—Vaginal Pulse.

"Chap. XI.—Pregnancy under unusual Circumstances.—At a very early or advanced Age.—Complicated with Diseases affecting the Uterine System.—With Extra-uterine Foetus.—Without Consciousness of Intercourse.—Without Sexual Sensibility.—After Imperfect Intercourse.—With a Secondary Ovum.—With a Blighted Ovum.

"Chap. XII.—Spurious, or Simulated Pregnancy.—Imitative Labor.—Phantom Tumor.—Unnecessary Gastrotomy.—Heim's Extraordinary Case.—Theories of Schmitt and Harvey.

"Chap. XIII.—Investigation after Death.—Examination of the Uterus and its Appendages.—The Ovaries.—Corpora Lutea.—Fallopian Tubes.—Antrum Tube.

"On the Period of Human Gestation.—The Natural Period.—Premature Births.—Viability.—Protracted Gestation.—Tables.

"On the Signs of Delivery.—Delivery during Natural Sleep.—Examination after Death.—Fatty Degeneration, and Reconstruction of the Uterine Substance.—Uterine Contraction after Death.—Posthumous Parturition.
“On the Spontaneous Amputation of the Foetal Limbs in Utero, and some other Pathological Lesions, to which the Child is liable before Birth.—
Rudimentary Reproduction of Lost Parts.—Fractures.—Wounds.—Effects of Coherent Placenta.”

These are all very interesting subjects, treated in the most able and masterly manner, by an elegant writer and an accomplished physician, who is deservedly regarded among the highest authorities in every thing that pertains to obstetric science and practice.

J. A. E.

On the Diseases of Women; including those of Pregnancy and Childbed.
By Fleetwood Churchill, M.D., T.C.D., M.R.I.A., Vice-President and Fellow of the King and Queen’s College of Physicians in Ireland; one of the Presidents of the Obstetrical Society; Professor of Midwifery, with Diseases of Women and Children, in the King and Queen’s College of Physicians in Ireland; Associate Member of the College of Physicians of Philadelphia, U. S., &c., &c. A new American edition, revised by the author. With Notes and additions, by D. Francis Condie, M.D., Fellow of the College of Physicians, Philadelphia, &c., &c. Philadelphia: Blanchard & Lea. 1857.

Soon after the publication of Dr. Churchill’s book, on Diseases of Females, in America, we adopted it as a text-book, believing it to be, though not the largest, the most comprehensive and systematic work on the subject in the English language. For some years past, a revised edition has been needed with the more recent improvements. We hail with much pleasure the volume before us, thoroughly revised, corrected, and brought up to the latest date, by Dr. Churchill himself, and rendered still more valuable by notes, from the experienced and able pen of Dr. D. F. Condie, of Philadelphia.

Dr. Churchill and his works are too well known to the Profession in the United States to require any commendation: a simple announcement is sufficient.

This is certainly as complete a résumé of all the latest and best information on all the diseases to which women are ever subject, as could be desired by pupil or practitioner. We have requested our friends, Messrs. T. Richards & Son, to have an ample supply on hand before the commencement of our next course of lectures.

J. A. E.

Death of Dr. Marshall Hall.—In recording here, from the London Lancet, the melancholy intelligence of the death of Marshall Hall, we are filled with feelings of deep regret. Science has indeed lost one of her most ardent and successful cultivators—Medical Philosophy her most able expositor, and mankind a long-tried friend and benefactor.

Our recent interesting relation to Dr. Hall, and his fair and generous relinquishment of his claims to a Physiological discovery, in our favor, had
endured him to us, and heighten the regard which we had ever entertained for him. It will henceforth be to us a most consoling reflection that in the whole of this discussion above referred to, our sentiments and expressions towards this illustrious leader in Science, were ever characterized by the high regard and reverential respect which he inspired.

Death, that most unsparing of tyrants, has exacted from the greatest physiologist of the age the last debt of nature. Slowly, surely, and relentlessly, disease has been undermining the earthly tabernacle of a mind which, for vast powers, high purposes, and indomitable energy, has found no superior in its native land in the present half-century. On Tuesday last, the 11th inst., Dr. Marshall Hall died at Brighton, aged 67 years.

It is impossible to record this melancholy event without feelings of the deepest sorrow. The loss is one which all must feel most keenly who have a reverence for high endeavors, for earnest devotion to science, and for all the sterling qualities which can adorn a man. Science has lost the worthiest of her sons, medicine has lost a great master, and philosophy a great thinker. The clear and vivid intellect of this celebrated man has steadily and successfully risen superior to the depressing influences of disease for the last fifteen years. Even during the present year, when confined to one room, his chamber has been a scene of intellectual activity. Physical debility, which robs most men of their power of thinking and reasoning, had not dimmed the brightness of his wonderful mind. Clear and penetrating, and impelled by a wide philanthropy, the last contribution of Dr. Marshall Hall to science has been a preeminently useful one to the cause of humanity. It is thus that great men should die. There is a grandeur in such a life-end, to which the mere external grace of a falling Caesar is not for one moment comparable.

Dr. Marshall Hall was born at Bashford, in Nottinghamshire, in the year 1790. His father was a manufacturer, and a man of no small capacity and information, and had the merit of being the first person to perceive the value of chlorine as a decolorizing agent, and applying it on a large scale. The gifts of intellect were bestowed with no sparing hand in this family. The father and two sons fully vindicated their claims to high intellectual endowments. But Dr. Marshall Hall has eclipsed his less brilliant relations. What in them was acumen and sagacity, was developed in him into genius. There was in him that rapid and far-searching intellectual vision which travels into regions far beyond the common ken of man, visible and appreciable only to the eagle glance of an almost prescient inquirer.

The history of such a man cannot fail to present numerous points of interest. The investigation of the rise and progress of a mind which has ever been foremost in the ranks of science, must afford many good and useful lessons. No fitful glare can be recognized in this life—no charlatanic attempt to pluck a crown of laurels which was not deserved; but a stern, conscientious, and faithful continuance of patient scientific toil, and the solid reward of a vast reputation.

The first step in Dr. Marshall Hall's education was taken at Nottingham Academy, then conducted by the Rev. J. Blanchard. From this school he went to Newark, where he acquired some elementary medical and chemical knowledge. But the first salient point in the life of Dr. Marshall Hall
was his matriculation at Edinburgh University, in the year 1809. For a
vigorous and apt mind, no better school could then have been chosen. In
the present day it is hardly possible to realize the enthusiasm which inspired
Edinburgh at that time. There were giants in those days. Enthusiasm,
indeed, is almost too tame a word. There was a furor, an excitement pro-
duced by the united influence of a complete galaxy of talent. It was im-
possible but that such men as Cullen, Home, Rutherford, Gregory, Hamilton,
Bell, and Barclay should kindle in the ardent minds of a vast concourse of
students a flame which should burn with answering brightness to their
own. From the school of that time we know many great men have sprung.
It is unnecessary to particularize names which are "familiar in our mouths
as household words." In that genial atmosphere, then, did Marshall Hall
first imbibe that enthusiastic love of science which has been his most mark-
ed characteristic. With youthful impetuosity he plunged into the study
of chemistry. Not content with merely assimilating the accepted doc-
trines of the science, he boldly endeavored to push its boundaries farther.
With wonderful power of generalization for so young a man, and with such
small materials as then existed for the purpose, Dr. Marshall Hall pointed out
that there was a grand distinction between all chemical bodies, which ruled
their chemical affinities. He showed that this distinction was the presence
or absence of oxygen. That oxygen compounds combined with oxygen
compounds, and compounds not containing oxygen with compounds simi-
larly devoid of that element; and that the two classes of compounds did
not combine together. He believed that this general law would elucidate
other chemical doctrines, and might prove valuable in the prosecution of
still more recondite principles. But a mind of such soaring aspirations
was not likely to confine itself even to such a comparatively wide field as
chemistry. The vast domain of medicine was before our student, rich in
unexplored regions, abounding in all that could excite his eager spirit of
inquiry, and reward his love of definite results. It was exactly at this pe-
riod in the history of modern medicine that physicians were taking stock,
as it were, of their old principles. Morbid anatomy, pursued in close con-
nection with clinical medicine, was showing the defects of diagnosis. With
the sagacious eye of one who was capable of seeing that the great necessity
of the day was a science of diagnosis, Dr. Marshall Hall threw himself into
the prosecution of this immensely important department of medicine at
once. Here again we find fresh evidence of his eminently progressive
spirit. No mere systematizing of what other men had gathered, but an
original and comprehensive treatise resulted from the labors of his student
life and early years in the profession.

In 1812 Marshall Hall took his degree of M. D., and shortly afterwards
was appointed to the much-coveted post of house-physician, under Drs.
Hamilton and Spens, at the Royal Infirmary of Edinburgh. In the follow-
ing year we find Dr. Hall lecturing on the Principles of Diagnosis to a class,
amongst whom were Dr. Robert Lee and Professor Grant. It was from
this course of lectures that the treatise on Diagnosis, which was first pub-
lished in 1817, took its origin.

In 1814 Dr. Marshall Hall left Edinburgh, after a residence there of five
years. Great as was the individuality of this remarkable man, we cannot
but point out that he was reared in a great school, taught by great men,
and infected with an enthusiasm which pervaded, in some degree, all who
came within its magical circle. Before entering upon his career as a pri-
vate practitioner, Dr. Hall determined to visit some of the continental schools. We find him, therefore, shortly after his departure, successively at Paris, Berlin, and Göttingen. The journey was made partly on foot, and armed. At Göttingen Dr. Hall became acquainted with Blumenbach.

In 1815, Dr. Marshall Hall settled at Nottingham as a physician, and he speedily acquired no small reputation and practice. After a time, the appointment of physician to the General Hospital there was conferred upon him, and in that sphere he labored until his removal to London, about ten years after his first settlement at Nottingham. Of his work on Diagnosis it is almost unnecessary for us now to speak in terms of praise. Comprehensive, lucid, exact, and reliable, this work has, in the main, stood the test of forty years’ trial. A better has not been produced. It was at this period of his career, too, that Dr. Hall made his researches into the effects of the loss of blood, the result of which was embodied in a paper read before the Royal Medical and Chirurgical Society in 1824. This paper and another in 1832, detailing Dr. Hall’s “Experiments on the Loss of Blood,” were published in the “Transactions of the Royal Medical and Chirurgical Society.” It is hardly possible to overrate the importance of these inquiries. They revolutionized the whole practice of medicine. A new light broke in upon the medical world. A distinction, not recognized before, was drawn between inflammation and irritation. It was pointed out that delirium and excitement were by no means necessarily declaratory of cerebral or meningeal inflammation, or even congestion. Loss of blood was shown to be at the root of much that had passed before for various grades of inflammation. Practical rules were educed both for treatment and diagnosis. It was shown that active inflammation produced a tolerance of bleeding from a free opening in the upright posture; and the rare merit of supplying at once a rule of treatment and a rule of diagnosis was Dr. Marshall Hall’s. Other works came forth from his pen about this time, for his mind was teeming with ideas, and his activity as an observer was unparalleled. It is hardly possible to enumerate all, but in 1827 came the “Commentaries upon various Diseases peculiar to Females”—a work which may still be consulted with advantage.

It was in 1826 that Dr. Marshall Hall sought this great metropolis as the umbilicus of the world. So active and earnest a mind could not find enough to satisfy its eager cravings in a provincial town. It was here, in this mighty city, that he determined to measure himself again with numerous competitors, and to win, if possible, all the honor and all the rewards that fortune can give to those who woo, her stoutly. The mind of this great man was essentially metropolitan and liberal. A fair field and no favor, and victory to the strongest, were the characteristics of his mind.

The next onward step in Dr. Marshall Hall’s career was a series of researches into the circulation of the blood in the minute vessels of the batrachia. A great step in physiology resulted from these. It was shown that the capillary vessels, properly so-called, are distinct, absolutely, both in structure and function, from the smallest arteries or veins; that the capillaries, or methaemata, are the vessels in which the nutritive changes in the economy are carried on.

But the great source of Dr. Marshall Hall’s honor, the basis upon which his fame must rest in all time to come, was yet undeveloped; his paramount claims to the admiration of his cotemporaries and of posterity consists in his discoveries concerning the nervous system. Like all really important
discoveries in natural science, those of Dr. Marshall Hall have had great practical effects. The soundest theory has been shown to be the best foundation for practice. That stupid heresy, that there is a vital distinction between the practical and theoretical man, was never more completely disproved than in the case of Marshall Hall. But we must endeavor to trace the progress of his researches. While engaged on the Essay on the Circulation of the Blood, it happened that a triton was decapitated. The headless body was divided into three portions: one consisted of the anterior extremities, another of the posterior, and a third of the tail. On irritating the last with a probe, it moved and coiled upwards; and similar phenomena occurred with the other segments of the body. Here, then, was a great question. Whence came that motor power? To set at rest that question, to solve that problem, has been the great labor of Dr. Marshall Hall's life.

The establishment of the reflex functions of this spinal cord; in short, the whole of the excito-motor physiology of the nervous system is the sole work of Dr. Marshall Hall. And not only this, but he has shown that there are in reality three great classes into which the various parts of the nervous system resolve themselves; the cerebral, or sentient-voluntary; the true spinal, or excito-motor; and the ganglionic. This was the real unravelling of that perplexed and tangled web which none had before been able to accomplish. The true idea of a nervous centre could never be said to have existed before the time of Marshall Hall. The ideas of centric and eccentric action, of reflexion, &c., so necessary to the comprehension of nerve-physiology, were unknown before the labors of this great discoverer. But these physiological discoveries were not mere barren facts. How rich a practical fund of therapeutical measures naturally follows the physiology and pathology of the excito-motor system, every well informed physician can testify. Two departments of medical practice have gained incalculably. The success of Dr. Marshall Hall in the treatment of nervous diseases was almost entirely the result of a rigid application of his own physiological discoveries to their pathology and therapeutics. Obstetricians have found their art elevated more than any other branch of medicine. In the place of uncertain and empirical rules, there are now definite and scientific principles upon which to fall back, with the unhesitating assurance that they will stand in good stead. The most complicated of all physiological acts, viz: the act of parturition, has, by the aid of the excito-motor system, been unravelled and reduced to beautiful harmony, if not simplicity. In like manner, many of the diseases of pregnancy are explained and illuminated by the same physiological knowledge. Innumerable symptoms of other diseases are rendered intelligible and rational, which before were obscure and empirical. But to follow out the influence of Dr. Marshall Hall's discoveries through their numerous and important ramifications would be almost to write a volume on the principles of medicine. It is impossible to say when we shall cease to find some new and important application of his discoveries to the great art of healing.

We cannot pass by this period of Dr. Marshall Hall's life without remarking upon the disgraceful treatment he received from the Royal Society. The days of persecution had happily passed by, but the day of dull obstinateness still remained. The Royal Society thought Dr. Hall's memoir "On the True Spinal Marrow and the Excito-Motor System of Nerves" unworthy of publication! So much for the acumen of this Society. A
very different verdict has, however, been given since by the great body of scientific men; and the Society, which formerly received this great man's contribution coldly, now mourns the loss of its brightest and most illustrious member.

Since the promulgation of his researches upon the nervous system, Dr. Marshall Hall has been principally occupied with extending, applying, and developing them in every possible direction. The admirable success with which he indoctrinated the profession at large with his views must be attributed as well to his native lucidity as to their inherent truth.

During the time of Palmer's trial, it occurred to Dr. Hall to institute a physiological test for the recognition of strychnia. As if to show the absolute correctness of his views, and how unlimited were the number and nature of the scrutinies they would bear, he found that a frog, immersed in water containing the \( \frac{1}{4} \text{grain} \) part of a grain of strychnia, would, in process of time, be thrown into tetanic convulsions. For the details of these experiments we must refer to The Lancet of last year. The physiological test was found to be far more delicate than the chemical. Here was an instance of sagacity and precision of thought which would have done credit to any man in the flower of his age.

The last and crowning effort of Dr. Marshall Hall in the cause of science and humanity has been his discovery of what is now universally known as the "Marshall Hall Method" of restoring asphyxiated persons. How completely and irrefragably he has proved the inutility and danger of the practices hitherto in vogue for the resuscitation of asphyxiated persons! Space prevents us from going into the theoretical details of Dr. Marshall Hall's method; but our columns have, for any time these last six months, contained overwhelming proofs of its truth and adaptation to practice. It is pleasing to find that this last labor of a great mind has been a labor of love, something added to the stock of human happiness, something taken away from the bitterness of life. It is singular enough that in the very place where Marshall Hall has drawn his last breath, two cases have lately occurred illustrating the superiority of the "Marshall Hall Method" over the empirical rules of the Royal Humane Society. In one case of drowning the warm bath was administered; in another, the "Marshall Hall Method" was resorted to: in the first case death was the result; in the second, restoration to life. It is also remarkable that in this number of our journal should be recorded three more examples, illustrative of the successful application of the "Marshall Hall Method" of treatment. It is curious, too, that one of them should have occurred at Nottingham.

In the practice of his profession, Dr. Marshall Hall was very successful. He linked himself early and resolutely to a great subject, and rose into fame upon his development of it. He realized an ample fortune as the reward of a life of unremitting toil. We do not mean to imply that competency was hardly earned under such conditions. Such a man would have been less than happy in a different sphere. Labor was to his restless and indomitable spirit a necessity. Even now, when we are recording the death of this illustrious and lamented physician, there is a volume in the press,—a recent effort of his prolific mind; and until within two months before his dissolution, the mental energies of this extraordinary man were engaged in preparing for publication, in "The Lancet, a series of papers, entitled, "The Complete Physiology of the Nervous System."

It is somewhat remarkable that Dr. Marshall Hall never held the office
Miscellaneous.

of physician in a hospital in London. He was only physician to a dispensary for a short time. He lectured at the Aldersgate-street and Webb-street School of Medicine, and also at St. Thomas's Hospital Medical School. He was a candidate for the Professorship of Medicine at University College upon one occasion; but owing, it is believed, to some improper influences, matters assumed such an aspect as to induce Dr. Hall to retire from the field.

We have thus far considered Dr. Hall as a man of science. In other relations of life he was equally deserving of our highest respect. As a politician, he was liberal in the highest degree. He was a strictly moral man, and was deeply imbued with a sense of the obligation of a practical cultivation of religion. That which he thought right to do, he did, with unwavering honesty and courage. All subterfuge, trickery, quackery, and guile, were utterly foreign to his nature. So simple and childlike was he in disposition, as hardly to be able to imagine in others the guile which had no home in his own breast. He was a kind husband, a most indulgent father, and a faithful friend. He married, in 1829, Charlotte, second daughter of Valentine Green, Esq., of Normanton-le-Heath, Leicestershire. Mrs. Marshall Hall's maternal grandfather was M.P. for Shaftesbury, and son of Dr. Cromwell Mortimer, physician to the Prince of Wales, father of George III. Throughout the protracted illness of Dr. Marshall Hall, the assiduous, devoted, and unremitting attentions of an affectionate wife were probably never surpassed. This testimony is due from personal observation of the fact. The deceased has left one son, who has relinquished the profession for the rural life of a country gentleman.

We must now close our notice of one over whose name we would fain linger. Melancholy as it is to say he was amongst us, our sorrow is stayed by the reflection that he did not live in vain. All that a grateful profession has to give to his memory will be given. We shall still think of him with affectionate respect as a Father in Medicine, but as a child in the purity and simplicity of his mind. Though no title has adorned the name of the great Marshall Hall, we who are left behind will esteem him as one who would have graced rather than have been graced by honors however exalted. The title, which he preferred beyond all others was that of the English physiologist.

The mortal remains of this distinguished man were, on Wednesday last, removed from Brighton to Nottingham, where, we believe, a post-mortem examination has been made by his brother-in-law, Mr. Higginbottom, his nephew, Mr. Higginbottom, Jr., and Dr. Ransom, physician to the Nottingham General Hospital. It is believed that the death of Dr. Marshall Hall was caused by exhaustion produced by a stricture of the cesophagus of many years' standing; accompanied latterly, it was considered by many eminent surgeons, with malignant ulceration of the part. Dr. Alfred Hall, of the Old Steyne, Brighton, was one of the chief medical attendants of the deceased in his last illness. Sir Benjamin Brodie had long since pronounced the malady from which Dr. Marshall Hall was suffering to afford no hope of the application of any permanent remedy.

Sulphate of Zinc and Nitrate of Silver in Chronic Ophthalmia.—Dr. Posta endeavors to lay down some rules, based on practical experience, respecting the employment of these substances. In all ophthalmias, the zinc should be employed as soon as the chronic stage commences, the pro-
portion being at first 1 part to 75 of the vehicle, going on in case of resistance of the disease to 2 to 100. When there is a slight degree of chronic keratitis present, with cloudiness of the cornea, the nitrate (1-20 part to 30 parts) is the preferable means. He considers that all greater strength than this is unjustifiable and mischievous.—[Bull. de Thérap., and Peninsular Journal of Medicine.

Gonorrhoea.—Mr. Dallas, of Odessa, confirms the statements of Taddei, Marchal and others, that copaiba injections afford the most efficacious treatment of gonorrhoea. He reports sixteen cases cured, without internal remedies, by repeated injections of the following mixture:—Copaiba, dr. 5; vitell. ovi unius; ext. opii, gr. j; aquæ, oz. viij. Dr. Henry Hancox (Lancet, Aug. 1856) pronounces buchu as effectual as copaiba in the treatment of gonorrhœa.—[Med. Chir. Rev.

Climate in Consumption.—Dr. Hays, by request, gave his views to the Ohio State Medical Society in regard to the treatment of chilblains, frost-bites, &c. In the course of his remarks, he said that in the expedition to the Arctic regions with Dr. Kane, he had never seen a case of tubercular disease among the natives, and heard of but one case of haemorrhage from the lungs. "If he had a consumptive patient, he would send him to Greenland, if possible, and put him upon train oil diet, with a dog sledge and a bear hunt for exercise."—Boston Med. and Surg. Jour.

Wholesome Bread.—A large company has been formed in London for the manufacture and sale of perfectly genuine flour and bread. A mill of enormous capacity has been secured, and the dough will be kneaded by machinery, exposed to public view while in full operation. All the analytical arrangements will be under the immediate personal supervision of Dr. Hassall. A capitalist, an experienced miller, is so confident of the commercial success of the company, that he has engaged to embark in it no less than fifty thousand dollars.—[Ib.

Lilac Leaves as a Febrifuge.—M. Macario having been induced to try these in intermittent fever, owing to a popular reputation they had acquired in Flanders, found that of 20 cases, 13 were entirely successful, and 7 failed. In some of the former, quinine or arsenic had failed. A decoction of the leaves was administered fasting, during five or six days in succession. Rev. Med., and Peninsular Jour. of Med.

Sesquichloride of Iron in Hemorrhages.—Dr. Herzfelder quite confirms the good accounts of this given by the French practitioners, as a most valuable agent in various kinds of internal hemorrhage, and far superior to ice, alum, tannin, etc. He dissolves a scruple in 4 ounces of water, and gives a spoonful every quarter or half hour. Dr. Raitth confirming this account, and especially as regards uterine hemorrhages, prefers the tinct. ferri sesquichl., as the watery solution is very nauseous.—[Buchner's Report and Nashville Jour. of Med. and Surg.