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THE

BRITISH AMERICAN JOURNAL.

ORIGINAL COMMUNICATIONS.

ART. XI.—*Cases in Surgery* By HORACE NELSON, M. D., late Editor of "*Nelson's American Lancet*," and former Professor of Surgery in the University of Vermont, &c.

1. *Case of Impalement terminating fatally on the second day from unascertained causes.*

John Corrigan of Plattsburgh, an active boy, ten years of age, on the 12th February, 1857, while jumping in the deep snow, in a garden, during school recess, fell astride the stump of a small apple tree about the size of the thumb and buried in the snow; he at once felt a sharp momentary sting which led him to suppose it had penetrated the anus. Hurrying home, I was soon called to see him, and after a careful visual and digital examination, could detect naught save a very small fissure, more properly speaking a scratch, on the left side of the anal opening, from which a small quantity of blood had escaped. The finger, well oiled, was now introduced into the rectum, but nothing abnormal could be detected, and little pain was complained of from this examination; the bladder was emptied in my presence, the urine being of an healthy aspect. Taking into consideration the absence of unfavorable symptoms, and the good appearance of the little fellow, the friends and bystanders came to the conclusion that he was more "scared than hurt," an opinion in which, I must confess, I was somewhat disposed to acquiesce. He was ordered to bed, cold applications to be kept to the anal and perineal regions, and eight grains of the Compound Ipecacuanha Powder given.

6 o'clock, P. M. The boy has slept three hours; complains of neither pain, soreness nor heat; there is no tumefaction; one evacuation, the fæces being slightly streaked with dark blood; pulse soft and regular; tongue moist; temperature of surface at the natural standard; to continue the cold applications.

Feb. 13th, 9 A. M. Has passed a good night, having slept quietly, and up to breakfast with the family; condition same as yesterday; ordered to remain in bed, and a dessert spoonful of castor oil to be given at noon. I saw the patient again in the evening, and found him improving in every respect; the bowels had

acted twice with ease and freedom from pain; no blood in the evacuations; urine voided naturally as to time and quantity; no prescription.

Feb. 14, 5 A. M. I was hastily called up as the boy was said to be dying, a fact which proved true, as he was dead before I reached the house. The parents informed me that he had gone to bed the evening previous, to all appearances, feeling quite well, and had slept in the same bed with a younger brother. On waking at five o'clock the father found his child expiring. Here was, certainly, a very unlooked for termination of the case, and I was then, as I am now, entirely ignorant of the immediate cause of death. The parents would not allow of an examination, and therefore I am left to conjectures.

Remarks.—The case was too sudden to be one of Peritonitis, and it could not have existed as none of the evident symptoms of this affection were present:—no tenderness of abdomen, no sense of heat or burning: no hardness, tension or elasticity of the abdominal parietes: no tumefaction, and, after death, no tympanitis; no nausea nor vomiting; no constipation, nor suppressed secretion of urine. It would be useless to dilate further on this conjecture.

There could have been no wound or rupture of the pelvic vessels as there had been no external hemorrhage; and presuming upon the *possibility* of a diffused or false aneurism, the filling up of the sac and consequent distension of the pelvic cellular tissue would have caused a feeling of weight and uneasiness in the part, and would have mechanically obstructed the action of the rectum as also that of the bladder, which was not the case; again, there would have been a gradual, if not sudden, failing of the powers of the circulation with its accompaniments, such as debility, pallor, langor, delirium, &c., proportionate to the amount of blood drawn from the circulation and poured into the sac. Such, however, was not the case, as the action of the heart was extraordinarily natural, considering the age of the patient and the general excitement surrounding him. Thus the second conjecture is equally as untenable as the first.

Lastly, could death have resulted from *nervous shock?* but here again how could this be? There had not been the slightest approach to depression of the vital powers, no rapid, indistinct, fluttering pulse; respiration was natural, and no coldness of the surface nor shrinking of the features; in one word, none of the many symptoms which are linked to form the chain of evidence of nervous shock were present. What then could have been the cause of death? I leave the question to be determined by the readers of the British American Journal, while I pass on to

Case No. 2.—Impalement upon a pitch-fork handle; severe laceration; inflammation; cure.

On the 7th September, 1857, I was requested to meet my friend Dr. Fulton, of Beckmantown, in consultation on a man named Patrick Ryan. The person was a stout, able-bodied farmer, who on the day previous, after completing the loading of a waggon with hay, threw the fork against the load, and sliding down met the handle half way, which passed up the rectum a distance of some five inches, when pitching forwards, he managed to pull out the handle, and made his way to the house, suffering great pain and bleeding profusely. Dr.

Fulton was immediately sent for, but did not see the patient for some four hours after the accident; there was great pain and tenderness in the abdomen, and all the indications of incipient, high inflammation, indicated to the doctor, the plan of treatment to be pursued; he at once bled him freely, ordered cold applications to the parts, and prescribed small doses of potassio-antimonii tartras. There being no amendment in the general condition of the patient the following day, the doctor kindly requested my assistance. An examination detected extensive laceration of the anus and rectum, which easily admitted three fingers; the mucous membrane was torn in shreds and ruffled up; great heat and tenderness of the parts; slight oozing of sanious fluid; constant desire, though inability, of voiding the urine. With much difficulty a catheter was introduced, and a large quantity of highly coloured and offensive urine drawn off; he was ordered to be bled again; to the nauseant was added some laxative medicine, and the cold applications to be continued. After a free evacuation of the bowels, to have a large dose of the compound ipecacuanha powder, and if the abdominal pain continued or increased, to apply a large blister to the whole surface of the abdomen. This plan of treatment was faithfully followed by the doctor, with such slight alterations as to meet the various indications, with the most happy results, and, in four weeks from the date of the injury, Ryan reported himself at my surgery, in Plattsburgh, quite recovered. I have seen him several times since, and he is as well as ever, and as "good as new."

Case No. 3.—Fistula in Ano, caused by falling on the handle of a rake six years ago; operation; removal of a piece of wood; cure.

I. Lacroix, of the parish of St. Geneviève, aged 54, of a weakly leucophlegmatic constitution, requested my advice in the month of November last, for trouble about the anus, of some three years duration, and for which he had consulted several physicians, without however, deriving any benefit. An examination at once revealed the presence of two fistulous openings on the left nates, one, the principal, passed backwards and upwards in the direction of the coccygeal bone, the other merely subcutaneous and a dependency of the first, passed perpendicularly downwards some two inches; the finger introduced into the rectum could not feel the probe which, from the direction of the fistula, and its distance from the anus, could only be introduced not quite two inches. Having explained to the patient the nature of the injury, and the only manner whereby he might reasonably expect the slightest prospect of relief, if not of permanent cure, he left me with the promise that I should be sent for in a few days to perform the operation at his house.

I heard nothing more of Lacroix till Tuesday the 7th Feb., when he returned in a worse plight than ever. He informed me that two neighbouring physicians had undertaken the case on the plan of "no cure no pay;" and that from certain pecuniary and other considerations weighing somewhat heavily in the scale, he had acceded to the terms and submitted to the operation; that he had been since a great sufferer, and was confident not only of no amendment but of positive injury. I examined once more, and saw that the operation had consisted merely in cutting open the subcutaneous sinus, leaving the fistula itself untouched, though

a stick of nitrate of silver had been introduced half an inch or so every day or every other day, for some ten days, causing excruciating pain, and the dressing completed by filling up the *external* opening of the fistula with lint. With all due consideration for the attending physicians, I could not but deprecate such a mode of procedure, and plainly told the old man that what had been done was worse than useless, and that he could never be cured by such treatment.

It was, therefore, resolved that I should go to Sainte Genevieve on Thursday the 9th, and perform the operation. This I did in the following manner and with the following results. The fistulous opening commencing, as I have before said, on the left nates, some three inches from the anus and one inch above it, passed directly backwards and to the right side till it reached the median line, where forming an obtuse angle it ran upwards and inwards, following to some extent the curvature of the sacrum. The first step in the operation was to lay open the horizontal portion of the sinus, which was done as follows: a grooved director being introduced and pressed somewhat forcibly came in contact with the integument at the raphé, where a small opening was made with the point of the scalpel, the end of the director pushed through and the intervening space divided with a stout bistoury. The little finger could now readily be passed along a canal—with smooth and almost cartilaginous walls—the length of some three inches, when its further process was arrested by a hard substance, to all appearance forming the bottom of the sinus. The right index finger was now introduced into the rectum and could feel distinctly the other finger in the canal; pushing it a little further up it also came in contact with the hard body already alluded to, and now something, of an irregular shape and completely enclosed in a smooth sac, could be felt between the two fingers. A small opening was carefully made at the bottom of the sinus, when the finger distinctly felt a hard resisting body which, had it not been for its peculiar situation, I should have supposed to be a necrosed os coccygis, or something else had I known the previous history of the case, as was afterwards explained. However the indication was evident, there was a foreign body, and the next step was its removal, therefore with a strong pair of ductile forceps I seized hold and began to make traction; the forceps slipped, and grasping once more, with a long and strong pull, out came a very funny looking substance, of which more presently. The bleeding which had not been very profuse, having ceased, the finger could now explore every portion of the sac which was situated anteriorly to the coccyx, and between it and the posterior wall of the rectum; a probe slowly passed over its surface fell through a small opening into the gut, and came in contact with the finger. Here then was a case of external and internal fistula with no intercommunication. A probe pointed bistoury was now introduced; and the operation was completed in the usual manner.

I now examined the body I had extracted and found it to be a piece of wood, square on four sides, one half inch at the base, tapering to one quarter of an inch at the apex, with a length a trifle less than one inch and three quarters. Being a little astonished at this singular discovery, I enquired of the old man how that piece of wood became lodged in such a situation, and he, to all appearances, not aware of its presence? After a few moments reflection, and with a hearty laugh,

he mentioned that, some six years before, while jumping on a mound of hay he had struck against the handle—home made—of a rake which was concealed in the hay. It inflicted a wound external to the anus, but he was not aware of any portion of the handle having been splintered or broken. After a confinement of a few weeks to the house, he resumed his labours, and in a couple of months he appeared to have completely recovered from the accident. Some three years ago, he complained of much pain and uneasiness, in the neighborhood of the anus, which became relieved by the developement and breaking of a small abscess, since that period there had been a continual discharge of a thin watery fluid, at times slightly tinged with blood, at others of a purulent character. Neither flatus nor the more fluid portion of the fæces were ever detected escaping through the Fistula. For the last year past there had also been a constant discharge from the anus, similar in character to that passing through the fistulous opening.

Remarks. The above case is rather unique, and highly interesting in some particulars; the first being that the foreign body should have remained, thus many years, without occasioning the slightest disturbance, in a situation so likely to be interfered with by many of the morbid states of the neighbouring organs;* in fact its presence was entirely ignored, save through the constant discharge and consequent detriment of comfort and cleanliness. The external fistula had no communication with the sac enclosing the piece of wood, and this will account for the absence of the prominent symptoms of complete fistula; while the small opening communicating the sac with the rectum, was evidently an effort of nature, though the process of ulceration, for throwing off the foreign body in the direction where least resistance would be encountered, and through the most natural channel—the rectum.

I have this day heard from my patient who is doing well, the wounds are fast healing, the appetite is good, and he is daily gaining strength.

27½ Little St. James Street, Feb. 26, 1860.

ART. XII.—*Cases in Practical Medicine.*—By A. H. David, M.D., Physician to St. Patrick's Hospital, Montreal, &c., &c.

Laryngismus Stridulus.—This affection is usually only met with during the first year or two of life, and causes much anxiety and alarm to the parents of the child, for the attacks come on without any apparent cause,—when the child, who otherwise seems in perfect health, is playing and becomes excited or vexed.

* As another striking illustration of the great length of time foreign substances may remain imbedded in the living tissues without occasioning the slightest local or general disturbance, I may be permitted to remark, that I have removed from between the rectus-femoris muscle and bone of the left thigh, of a man named Ferris, a piece of wood two inches long, and the size of a goose-quill, which had occupied that situation for *nineteen years* without his being aware of its presence, till after its removal by the opening of an abscess that had been in the process of formation on the anterior part of the thigh for one month *only*. The case was published in No. 1 Vol. 12, of my *American Lancet*, Dec. 10, 1855, and republished in the *Dublin Medical Press*, No. 895, Feb. 13, 1856.

They also come on when the child awakens from sleep, and when it is exposed suddenly to a current of cold air. The paroxysms come on in this way, the child struggles for breath as if the respiration were arrested for the moment, but after repeated violent efforts recovers with a *crowing* or *shrill* inspiration approximating hooping-cough or croup. If the paroxysm lasts many seconds the face and extremities become purple, the head is thrown back and the spine bent. They may recur often and in the end convulsions become general. This singular affection is generally met with in children who are late in cutting their teeth, and who have several presenting at the same time, and whose digestion and assimilating powers are weak and readily disordered.

It is now generally admitted that this affection is caused by irritation at the roots or origin or *some portion* of the Laryngeal nerves, whereby the muscles which close the glottis are unduly contracted and cause the peculiar croupy inspiration; and the child who suffers from it has always very tardy and difficult dentition, and a constipated state of the bowels.

The treatment I have been led to adopt in this view of the case is very simple, and as I have met with perfect success in the five cases in which I have used it, I think it my duty to lay it before the profession. The first case was a child of my own who suffered most severely from the spasm, and who once or twice was thought dead—he had been subject to the attacks for some time, and although he had not had any convulsions, the attacks of the spasms were becoming more and more frequent and more severe—when my friend Dr. Arnoldi, then of Montreal, but who now resides in Toronto, and who has devoted much attention to the diseases of children, suggested, in consultation with me about the case, the trial of some counterirritant to the upper portion of the spine. Mustard poultices were tried first, then a blister, with but very little relief, when I noticed in Dunglison's "New Remedies" that the ointment of the Bin-iodide of Mercury, when absorbed into the system, had in addition to its local irritant effects, a tendency to cause diarrhœa, which was exactly what I wanted, as the childs' bowels were, as is always the case in this disease, obstinately constipated. It was commenced with immediately of the strength of one grain to the drachm of simple ointment, and in a few days we had the satisfaction of seeing the spasms diminish in both strength and frequency; they soon ceased altogether, and the child was cured. A few weeks after this a lady residing in Quebec, brought her child to Montreal, her Physician having recommended change of air, as her child was labouring under this disease, but with the addition of occasional convulsions; she placed the child under my care, and this case also was rapidly cured by the same simple treatment, of course due attention having been paid not only to the state of the gums but also to the state of the stomach and bowels.

Shortly after these two cases, but about the same time, a case occurred in Dr. Arnoldi's practice, which he kindly afforded me an opportunity of seeing three or four times with him, which was likewise soon cured by the same course of treatment. Since these cases occurred I have met with two more, and both were cured by the same means—the last one, however, proved much more obstinate than the four previous ones, for whenever I attempted to scarify the gums, convulsions were produced, so when I had to do it I was compelled to place the child under the

influence of chloroform, so as to prevent convulsions coming on; and although the child has still several teeth to cut, for the last three weeks he has had but one slight attack of the spasms, which however caused his mother no uneasiness, the use of the ointment being still constantly continued, and the child is improving in every way; and I have not the slightest doubt but as soon as he has cut all his teeth, the spasm will leave him, as there will not then be any further cause of irritation.

In all these cases I would strongly urge that great attention should be paid, *firstly* to the state of the gums, scarifying them freely and deeply as often as necessary; and *secondly*, as the bowels are always constipated, giving every day one or two doses of the fluid extract of senna, which I have found to be the most suitable medicine, and to confine the child to a little simple cream and water or very thin arrowroot and water for diet, giving him as little as possible; and if we may judge from the success of these cases we may safely predict a rapid cure.

Craig Street, March, 1860.

ART.—XIII. *Case of Puerperal Convulsions.*—Twins.—Both children and mother saved. By P. R. SHAVER, M. D., Stratford, County Perth.

I was called per Telegram to the village of Shakspeare, some ten miles from my own residence, to see a woman living in the neighbourhood, who was in labour with her third child. Upon my arrival, I was informed that the patient had been ill some eighteen or twenty hours, and that she had had six or seven very strong convulsions or fits. When I arrived at the bedside she was immediately seized with a very severe and violent convulsion, which I thought would have terminated her existence, indeed I felt convinced that she could not have survived another attack similar to the existing one, so near was she apparently to the moment of her dissolution. When the paroxysm of this fearful spasm was at an end, I proceeded to the examination of the patient. The pulse was 120 per minute, the skin hot and dry, eyes staring and immoveable, countenance ghastly and of a livid hue, and every appearance of approaching death. She was of course insensible, and had been so for eight or ten hours. I now examined the uterus, found the os partly dilated, and the pains very feeble and irregular. After searching for the presentation, I found an arm and foot presenting. As there was no time to be lost, and apprehensive of another convulsion, I immediately seized my lancet, plunged it into the median cephalic vein of the right arm, allowed the blood to flow free and fast, until I had evacuated about one pound and a half. This brought the pulse down to about eighty per minute, and symptoms of returning consciousness began to manifest themselves. The countenance became more natural, and not so unbearable to look upon—the uterine pains began to set in, whereupon I began to assist nature in the delivery, by introducing my hand, seizing both feet, and gradually bringing them into the vagina, when with the assistance of a few pains and gentle traction, the child was readily expelled, apparently asphyxiated, but by the adoption of the usual appliances it was soon restored. After separating the offspring from the mother, I made another examination per vaginam, and to my astonishment I found the

arm of a second child presenting; whereupon I re-introduced my hand into the uterus, seized the feet, effected version, and delivered the second child as the first. This child was born apparently as lifeless as the first, and it was resuscitated in the same manner.

After having disposed of the children, which were large and healthy, I applied cold and pressure to the abdomen, over the region of the uterus, and in a few minutes the placenta was expelled, the uterus contracted firmly, and the mother kept perfectly quiet. I applied a large compress and bandage, and in an hour she was quite rational and conversed coherently. She made a good and speedy recovery.

The above case is extremely interesting because of its infrequency, and the great mortality of convulsions complicating the labour, which especially affects the children. The proportion of deaths upon the maternal side is estimated at about one in four; on the fœtal side it is still greater. The case is also interesting in point of its peculiar complications, namely: the convulsions—the two shoulder presentations, demanding version—all occurring in one accouchement.

Stratford, County Perth, 18th February, 1860.

REVIEWS, &c.

ART. XIV.—*Amputations and Artificial Limbs.* By William Robert Grossmith. London: Longman & Co.

Artificial Limbs. Their construction and Application. By Henry Heather Bigg. London: John Churchill.

Localized Movements. By Henry Heather Bigg. London: J. Churchill.

In the great anxiety evinced in the present day to follow any new method of amputating, or any new operation which claims a place in Conservative Surgery, we fear the future comfort of the patient is sometimes forgotten and the future use of the limb not taken sufficiently into consideration. It must be evident that an operation which would be well suited to a person whose avocation is of a sedentary nature, may not be adapted for one whose daily bread must be earned on the railroad or on the farm, and whose means do not admit of his procuring those handsome and useful substitutes for the limb removed by the surgeon, and even if put in possession of one by the assistance of friends, or as is sometimes the case now, by the subscriptions of his fellow laborers, or the contributions of benevolent persons, it often happens, he is not able to use it, and selects one less sightly and complicated, but more useful. But apart from this view of the case, we should be guided to a certain extent in the selection of an operation by the views of practical men whose business it is to supply a useful substitute for the limb we have removed. Let us take the lower extremity for illustration. Some of our readers may recollect that Mr. Syme advocated strongly, a few years ago, amputation at the knee joint, and at the ankle joint, and was so

much disappointed at his recommendation not being more generally followed, that he threw out a hint to those whose limbs had been removed by older methods, that they had good grounds for instituting legal proceedings against their medical advisers for submitting them to unnecessary mutilation. The surgeons of the day were divided in opinion as to the advantages of these operations. Mr. Fergusson recommended the amputation at the ankle now known as "Syme's Operation" in the second edition of his work, but in the third edition, he says that a more extended experience obliges him to condemn it. At this present moment this operation is on its trial. We do not intend expressing our own opinions in this matter, though an experience of the operation has enabled us to form rules for our own guidance, but our readers may like to know what the makers of artificial limbs say on the matter. Mr. Grossmith mentions some objections to this operation which are equally applicable to amputation at the knee; he says "the mechanist cannot apply the usual artificial acting-joint—as the stump when well covered at the point (to form the heel cushion) reaches to within one and a-half or two inches of the ground:—he is therefore obliged to place metal-joints on each side of the point of the stump. In appearance, the apparatus will never be as neat and well-formed as that made for the mid-calf or upper-third operation; but whether the patient is sufficiently compensated for this defect, by his being enabled to take a bearing on the end of the stump (and some as will be seen by reference to the list of cases, do so with extraordinary firmness,) is a matter I must leave for the consideration of the Surgeon, and those who are about to be amputated."—p. 35.

We have examined the three cases of Syme's operation given by Mr. Grossmith, and have not found a confirmation of the above statement. In the first, "it was some time before the patient could bear pressure on the end of the stump and I found it necessary for him at first to take the entire bearing under the knee. After a few month's wear, however, and gradual application of pressure, by cushions, to the end of the stump, the tenderness was got over. He now walks firmly, taking his principal weight on the point, and using the knee-bearing only at times when relief is required."

In the second case it is remarked "the patient was unable to bear much pressure on the end of the stump for some time after having the limb (artificial) and I found it necessary to take the chief bearing under the patella." The third case is that of a "stout person walking with great firmness, but taking almost the whole of the bearing under the knee, not being yet able to sustain much pressure on the point of the stump."

In these extracts we learn a good deal of the results of this operation that would not reach the public eye through any other channel; the operations were performed on persons in affluent circumstances, who could afford to wait for the removal of tenderness from the stump, and could employ one of the most skilful mechanicians in the world to supply an artificial, for the removed limb; but could a poor labourer remain idle so long without bringing himself and his family to beggary, and supposing him to make an excellent recovery, and avoid all the dangers which Fergusson and others say are the frequent consequences of the operation, would he have as useful a limb at the end of six or twelve months, as if the amputa-

tion had been made at the middle of the leg. We have no hesitation in saying he would not. Syme's operation is adapted for the rich man, it is not well suited to the poor man. Moreover we believe it is most successful in the young subject, the victim of scrofulous disease; we have not found it a good operation in the old subject with languid circulation; nor in cases of severe frost-bite when the line of separation leaves only space enough to make the flaps; here the parts immediately above those undergoing separation have been frozen to a point short of mortification, and their vitality has been so reduced, that they are not suited for union by adhesion or granulation and usually such flaps either slough, off or they melt away by slow absorption, leaving the bones bare, and rendering an amputation higher up, necessary—and we may remark here, that we have had most success in amputations for frost-bite when we have made (as now we invariably do) our flaps at some distance from the line of separation. Half an inch in the length of the stump, or even an inch, is of little consequence compared with the time a patient may be confined to bed, from the sluggish healing of a wound made in parts whose vitality is depressed, and from which we ought not to expect these important processes necessary to union, to be performed. Nor have we found this operation a successful one in severe railroad injuries of the foot—for though the integuments about the ankle joint may appear healthy before the operation, yet in a few days, suppuration takes place around the lower ends of the tibia and fibula, and the skin sloughs off, although it may have looked healthy and well nourished at the time of the operation. We believe this is the result of the stretching it has undergone from the foot having been caught in the machinery, (for we frequently find the tendons torn away from their attachment to the muscular fibres) whereby its vascular supply from beneath has been extensively lacerated, and the skin dies from want of nourishment, being dissected off the subjacent parts to some distance from the seat of the injury.

Mr. Bigg's remarks coincide with those of the writer just quoted. He says, "latterly, owing to the advances made by that department of Surgery called "conservative," many cases have occurred where only the anterior or tarsal portion of the foot has undergone amputation, thus leaving the os calcis or heel for the patient to rest on. This operation, though producing an extremely valuable stump for the purpose intended, becomes a matter of extreme difficulty to the mechanician when it has to be made the point of attachment for an artificial foot." The mechanical obstacles are then enumerated.

Apart then from the objections that might be urged against Syme's operation, and we have the evidence of Fergusson and others to show that they are neither few nor unimportant, we have the testimony of two of the most celebrated mechanicians to the great difficulty of adjusting an artificial foot to the stumps, made in this operation and consequently, the surgeon should allow these objections their proper weight before recommending to patients in humble life, operations that cannot render them as comfortable or as capable of earning a livelihood, as some others that do not lay claim to the claptrap of being styled "conservative." It is quite evident that the patient who can ride in his carriage may have an operation performed so as to allow of an artificial substitute for the removed limb, and may make

selection of a particular proceeding with a view to elegance of adaptation and concealment of deformity, which is not suited to the circumstances of the mechanic or labourer, who naturally looks to making the best use of his mutilated limb, and to whom appearances are of secondary importance. For the former, amputation at the ankle, protracted recovery, and eventually an artificial foot, very expensive, but difficult of detection, may have attractions, that are by no means tempting to the latter, who will prefer short confinement, speedy return to his daily labours, and a wooden leg, cheap, difficult to break, capable of bearing his weight in rough places, not liable to go out of order, and admitting of easy adjustment.

We have also the views of Mr. Grossmith on amputation at the knee joint to lay before our readers—"This operation" he says, "if proper regard is taken with reference to the patients' future comfort and progression, should certainly never be performed on adults. The natural action of the joint is destroyed, and the stump when the point is well covered is brought so low, that if a cushion, and an artificial acting-joint are placed beneath it, a most awkward gait, and unsightly appearance are produced,—the flexion of the knee being necessarily three or four inches lower than in the natural limb. A better appearance is made if a bearing on the end of the stump is not attempted, and steel points placed on each side of the knee; but even then, the joints are required to be made so strong, to sustain the whole weight of the body, and so much extra mechanism is necessary to throw the foot forward, that the limb is rendered heavy and clumsy and the patient will never walk as well as those who are amputated at the thigh."

"In infancy or childhood, however, I think this method of operation advantageous—In young subjects, the stump can scarcely be left too long, as the growth of the frame and atrophy of the stump differ,—the latter remaining without increase in size or length (or nearly so), while the body obtains its growth in due proportion."—page 33.

As a Machinist Mr. Grossmith prefers amputation at mid-calf to that nearer the ankle joint. He remarks "then again, I am compelled to dissent from a general opinion (?) which seems to prevail amongst the profession that stumps of the leg may be considered relatively good, in proportion to their length from the lower to the upper third. I am convinced, from long experience, that the *middle of the calf* is a far preferable place to select for the operation, than the *lower third*—the stump produced by the former operation being always better covered, and less liable to excoriation, and neuralgic shooting. With reference also to the construction of the artificial limb, the amputation immediately above the ankle is highly objectionable,—page 34.

Mr. Grossmith gives us an opportunity of judging of the comparative frequency of the performance of the circular, and the flap operations, in the class of persons requiring his services. Out of 175 cases of amputation of the lower extremity, 65 were circular, 94 flap, in 9 cases the method is not mentioned, in 3, Syme's operation was performed; for 2, he made limbs where there wasa congenital defect, in 2, Chopart's operation was performed.

Another result of Mr. Grossmith's table is rather interesting. He gives the

state of the patients health after the two kinds of amputation, from which we have made out the following results. In amputation *above the knee*—out of 40 cases of circular operation, the health was good when the patients applied for artificial limbs in 32 cases, and bad in 8: out of 32 cases of flap operation, the health was good in 26, and bad in 6—an opposite result is observed in amputation *below the knee:* in 23 cases, of the circular, the health was good in 17, bad in 6. In the 34 cases of flap operation, the health was good in 29, and bad in 5. The health was good in all the Syme's operations, and in Chopart's.

We regret that we have space for only one practical remark, which is, that Mr. Grossmith insists strongly on our preventing our patients making use of a wooden leg or pin, if we intend them to use an artificial leg: "the use of the wooden pin, if only for a few weeks caused them to raise the body at each step, in order to lift it clear from the ground, and afterwards when they have the artificial limb, they continue the same awkward movement, instead of using the acting knee joint—a habit it often takes years to overcome. I know that this hint is not in accordance with the accredited opinions of the profession. It is also against my own pecuniary interests, nevertheless I assert it as a fact, easily proved by observation, that none walk so well and gracefully on artificial Limbs as those who have never used a Pin-leg. We may mention that Mr. Grossmith obtained Prize Medals at the London Exhibition in 1851, and at that of Paris in 1855.

Mr. Bigg's work is well deserving of perusal. It is not confined to mere descriptions of the limbs he can supply, but treats scientifically of several deformities, for which mechanical aid may be employed. It is amply illustrated with beautiful wood-cuts, representing all sorts of contrivances to help the afflicted, from the worthy sportsman, whose loss of his left arm does not prevent him having a crack at the birds on the 12th of August, to the hardy Hudson Bay hunter, who has had adjusted to the stump-sheath of the right arm, a most formidable dagger blade, "to defend himself against the attack of any wild animal he might in his travels encounter."

Mr. Bigg gives ample directions to those desirous of obtaining an artificial limb, how to proceed in the measurement of the stump. By sending these measurements taken in the manner directed, they may depend upon having their orders duly attended to. Mr. Bigg has lately written an excellent work on Deformities, wherein, he displays very extensive and accurate anatomical knowledge, and his work on "Localized Movements," will amply repay perusal.

ART. XV.—*An Epitome of Braithwaite's Retrospect of Practical Medicine and Surgery*, containing a condensed summary of the most important cases, &c., &c., the whole alphabetically classified, and supplied with an addenda, comprising a table of French weights and measures reduced to English standard, &c., &c., in five parts. By Walter S. Wells, M. D. Part first, New York: C. T. Evans, publisher, 8vo. pp. 304.

Our own library contains the forty volumes of which the five parts proposed for publication under the foregoing title, are to be the epitome. Mr. Braith-

waite has, with a great additional amount of self imposed labour, given every second year, a general index to the preceding four volumes of the Retrospect, but even this by no means meets the demands upon this valuable encyclopedia of modern practice, as far as time is concerned. It has sometimes cost us hours of search to get at what we required, with every simplification furnished by the original itself. We cannot, therefore, but hail Dr. Well's Epitome as a most valuable addition, not only to every library possessing a copy of the original work, but to every practitioner who wishes to seize with eagle glance upon the current literature, on any given topic connected with Medicine, Surgery or Midwifery, the three most important branches of our profession.

The subjects treated are all alphabetically arranged, and the first part terminates with "Cancerous affections," under the letter C. The other parts will proceed in like order, and an abstract of each paper under its especial caption is given, commencing with the first volume and ending with the last.

Braithwaite's Retrospect is beyond all comparison, one of the best digests of the medical literature of the day, and the Epitome, if the future parts are carried out in the manner of the one before us, will prove a still more valuable one if such can possibly be.

As we are in a critical vein at the present moment, we would suggest to the editor the propriety of omitting the article "an" before the word "addenda" in the title, or (what meets the same object), the substitution of the word "addendum" for "addenda" in it. It is an awkward grammatical error to meet in the title of a professedly classic work, and it is much to be regretted that printers will, despite every precaution, take such monstrous liberties with the manuscripts of authors. With the typographical execution of the work otherwise, we have no fault to find; it is in fact every thing we could desire. It is almost absurd to imagine that we could obtain for five dollars, the substance of Braithwaite's forty volumes, the English edition of which costs between fifteen and twenty pounds; yet nevertheless such is fact.

ART. XVI.—*The half yearly Abstract of the Medical Sciences*, being a practical and analytical digest of the contents of the principal British, American, and Continental medical works, published during the preceding six months, &c., &c., edited by W. H. Ranking, M. D., and C. B. Radcliffe, M. D. July to December, 1859. Philadelphia: Lindsay and Blakiston. Montreal: B. Dawson and Son, 1860, 8vo. pp. 303.

The foregoing is the American reprint of Ranking's valuable serial, and appears to be a faithful copy of the original. The work is too well known to the profession to need any commendation of ours. Like Braithwaite's Retrospect, it contains the most valuable portion of the medical literature of the preceding six months, and this number completes the thirtieth volume. Attached to this number we notice a rather singularly written letter to the profession, from Dr. Ignatius Langer, who, without alluding in the slightest degree to Dr. Wood's experiments on Hypodermic injection, seems to lay claim to a priority in the practice,

observing that "he experimented early in December, 1858," on cats and dogs, with a solution of quinia or its sulphate, and finally repeating the experiments on patients, he "succeeded in checking the anticipated paroxysms in different forms of intermittents." Dr. Wood's paper, as the result of his experiments, was published in the British Medical Journal of 28th August, 1858. We cannot speak in high terms of Dr. Ignatius Langer's orthography. We ought to observe that Ranking's Abstract, the title by which it is familiarly known, may be purchased at B. Dawson and Son, Great St. James Street.

ART. XVII.—ARCHAIA; or Studies of the Cosmogony and Natural History of the Hebrew Scriptures. By J. W. DAWSON, LL. D., F.G.S., Principal of M'Gill College; Author of "Acadian Geology," &c., &c. Montreal: B. Dawson & Son. London: Samson Low, Son & Co., 1860, 12mo. pp. 400. (*Concluded.*)

In his fourth chapter, Dr. Dawson commences to analyze the grammatical construction of the text. Before we proceed to notice how he does this, we cannot but express our regret that he did not extend his Hebrew researches out of the sacred record; so as to show how far the post-biblical Jewish writings enlighten us, as to the manner in which the ancient people of God understood the text. In connection with geological inquiries we deem it an interesting fact that the most ancient cosmogonists, both Indian and Egyptian, believed and transmitted to some writers of the Grecian sects, the doctrine of the successive destruction and renovation of the earth—the theme, as Plutarch says, of one of the hymns of Orpheus. Equally interesting is it to learn from Ovid, that Pythagoras anticipated the now received doctrines of geology almost as accurately as he did the astronomical theory of Copernicus; but with far greater interest would we have read, had Dr. Dawson considered it as coming within the scope of his work, his excerpta of the Jewish traditions respecting the Cosmogony which would not only enable us to see how the ancient Hebrews themselves understood the Mosaic narrative, which under God they have preserved to the world, but would establish the fact that they, more fully than Pythagoras, anticipated the modern doctrines of geology. We shall presently have occasion to see this in one instance, when examining the definition of *Yom* as given in "Archaia"—at present our investigation must be confined to a term earlier employed by the text, viz., *Bara*, concerning which Dr. Dawson says:—

"But what is creation, in the sense of the Hebrew writer? The act is expressed by the verb *Bara*, a word of comparatively rare occurrence in the Scriptures, and employed to denote *absolute creation*. If, says Professor Stuart, of Andover, this word does not mean to create in the highest sense, then the Hebrews had no word by which they could designate this idea. Yet, like our English 'create,' the word is used in secondary and figurative senses, which in no degree detract from its force when strictly and literally used."

If we fully endorse all the above, we do but accept the definition of *Bara* which has been, all but universally, given to it by biblical critics. Nevertheless, it is asserted that *Bara* is not here used to express the idea of absolute creation. The weight of opposing testimony is, however, quite crushing to this assertion,

which we cannot regard as having the least foundation in fact to sustain it. The testimony of Christian writers is easily attainable. If we now seek that of Jewish critics, which is, perhaps, less easily attainable to the reader, we shall find that they almost unanimously attach to *Bara*, the meaning of absolute creation. As we think that the Hebrew people should certainly know, better than others, what was the traditional and generally received meaning of certain terms in their language, we refer now to some of their chief theological and philosophical writers, and find that besides the secondary and figurative meanings they give the word, they explain *Bara* as, המצאת היש מאין *i. e.*, "the production of something from nothing." This is the definition of the celebrated Maimonides, the most esteemed authority among them, in his valuable philosophical work *Morch Neboochim*, or Guide to the Perplexed; and we prefer this definition of the orthodox Maimonides to that which accords rather with the philosophy of the more sceptical Baruch Spinoza, though the latter be also of Jewish origin. But, ranged on the side of Maimonides are the greatest names in Hebrew literature, from Kimchi and Abarbanel, down to Moses Mendelssohn. Kimchi in his *Sepher Hashorashim* (Book of Roots) says "*Bara* means התחדש הדבר ויצאתו מאין ליש *i. e.* the making of the thing newly, and its production out of nothing." This is the exposition given by the latest Anglo-Jewish commentators;* by the German translators who render the word by *erschaffen*; and by the Spanish translators, who render the word, *crio*. The latter corresponds to the *creavit* of the Vulgate; and although the Septuagint version has ποιεῖν, yet this word, as remarked by Parkhurst in his valuable "Greek Lexicon to the New Testament" also implies creation in its absolute sense. He quotes several examples and adds "so, in the LXX it frequently answers to the Hebrew *Bara* to create." The Lingua Sacra of David Levy, Newman, M. Josephs and other modern Jewish lexicographers explain it in the same way. So Stockius, Simonis, and Parkhurst. The "Critica Sacra" on the authority of Paulus Fagius tells us, "Statuunt Heb. differentiam inter BARA, YATSTAR et ASAH *creabit, formavit et fecit.* Creare dicunt, est ex nihilo aliquid facere. Formare, enti creato figuram inducere. Facere, membra singula ordinare. Sic Esaiæ, 43, 7, 'Creavi eum, formavi eum atque feci eum.' Quem locum R. David Kimchi sic explicat. 'Creavi eum,' hoc est, *produxi eum de nihilo ad esse.* Dein 'formavi eum,' eo quod feci eum existere dispositione formæ. Postremò feci eum hoc est disposui seu ordinavi eum." We regard this passage from Isaiah xliii, and the exposition thereof by Kimchi just noticed by the "Critica Sacra" as very conclusive. From it, we should scarcely be disposed to admit that *Bara* and *'asah* are, properly speaking, convertible terms; or that popular usage could deprive *Bara* of the wider meaning—that of producing something not before existing—which *'asah* does not possess, and for which reason as we are reminded in "Archaia" it is applied to the operations of God the sole creator of heaven and earth. But it may be further objected that no biblical critic of modern times will say that on grammatical grounds *Bara* means the absolute creation out of nothing. To which we reply that they yet do say so very generally

* See "The Sacred Scriptures in Hebrew and English, &c.," by the Rev. D. A. De Sola, and Rev. M. J. Raphall, with notes, &c., London, Bagster, 1844.

and that the most eminent Hebrew critic among Christians in modern times, Wilhelm Gesenius does so. He says in his Lexicon, *Bara* is "spoken of the *creation* of the heavens and the earth," and after, adds "whence it is apparent that *Bara* implies the creation of something new, not before existing." But there are many passages in the Scriptures which indicate that the word was intended to convey this meaning. We will cite but a few. Isai. 40, 26, where it is employed in connection with *motsée* to bring forth, produce. Isai. 48, 7, "they are created now, and not from the beginning;" so Ex. 34, 10, "which were not created in all the earth." Ps. 148, 5, "He commanded and they were created." Ps. 89, 13, "The north and the south thou hast created." Jer. 21, 22, "The Lord hath created a new thing in the earth." Numbers 16, 30. "If the Lord create a *beriah* (creation) which means, says Fürst, "*Dabar chadash lo hayah bangolom velo nishmang, i. e.*, a new thing which was never yet seen nor heard in the world." Of the figurative meaning which some of these passages have, Dr. Dawson says on page 63 :—

"It is, however, evidently an inversion of sound exposition, to say that these secondary or figurative meanings should determine the primary and literal sense in Genesis 1st. On the contrary, we should rather infer that the inspired writers in these cases selected the proper word for creation, to express in the most forcible manner, the novel and thorough character of the changes to which they refer, and their direct dependence on the divine will. By such expressions we are, in effect, referred back to the original use of the word as denoting the actual creation of matter by the command of God, in contradistinction from those arrangements which have been effected by the gradual operation of secondary agents or of laws attached to matter at its creation." And on page 62, we read that "the use of *Bara*, in connection with the introduction of great reptiles and of man, has been cited to disprove its sense of absolute creation. It must be observed, however, that in the first of these cases we have the earliest appearance of animal life, and in the second, the introduction of a rational and spiritual nature. Nothing but pure materialism can suppose that the elements of vital and spiritual being were included in the matter of the heavens and the earth as produced in the beginning; and as the scripture writers were not materialists, we may infer that they recognized, in the introduction of life and reason, acts of absolute creation, just as in the origin of matter itself."

Such, also, are the views expressed in the commentary of the eloquent Abarbanel, who wrote in the 15th century. He says in a lengthy and able exposition of *Bara* ולכן נכ' ייחס בריאתם לאלהים להגיד שלא היה כח במים להמצא דבר זר ונפלא כמותם "And therefore Moses refers their (the great reptiles, etc.,) creation in a direct manner to God; to teach us that the waters were not endowed with the power of producing such as they."

We have dwelt at some length on the term *Bara*, because we believe that an important doctrine is involved in the signification which has been attached to it by "Archaia" and the ablest biblical critics. And we maintain this signification not on mere philological grounds, but because we believe it to be in perfect harmony with the important design the narrative of the Cosmogony by Moses was intended to serve, in overthrowing *by its innate truth* the false theories of heathenism, one of which maintained the eternity of matter.

The next important term considered by Dr. Dawson is *Shamayim*, heavens. His remarks on this word, on pp. 64, 65, we have read attentively in connection with his chapter on the atmosphere commencing page 130, whence we perceive

that he does not restrict the term to the atmosphere merely; but we read, as his more satisfactory conclusion, that "heaven, in the popular speech of the Hebrews, as in our own, had different meanings, applying alike to the cloudy, the astral and the spiritual heaven;" page 140. Again on page 65, "We may accept the word in this verse as including the material heavens in the widest sense." Such also we find to be the opinion of the Hebrew writers, a digest of whose views may be found in the commentaries of Abarbanel and Arama in *Akedath Yitschak*. The views with reference to the restriction of the term *Shamaim* on page 65, we regard as quite satisfactory, recollecting that in verse 15 we find the expression *birkiang hashamaim* where the two nouns *raking* (expanse), and *shamaim* (heavens) are in the construct state, or in regimen;—by the Hebrew grammarians called סמוך, and must be translated "in the expanse of the heavens." This translation, however, would not imply that these two nouns necessarily conveyed only one idea, or represented only one thing, not more than the two nouns, *bayit* (house, a thing), and *melech* (king, a person), would represent one thing if we place them in the construct form, and write *beth hamelech*, house of the king. We must make a distinction between *connexion* of sense and *identity* of sense. In this chapter on the atmosphere, the mistranslation of the authorized version of *rakiang* by firmament after the *firmamentum* of the Vulgate, which is but a translation of the erroneous στερεωμα of the Septuagint, and the old idea of a solid firmament are thus exploded:—

"The notion of a solid or arched firmament was probably altogether remote from the minds of these (Scriptural) writers. Such perhaps may have prevailed at the time when the Septuagint translation was made, but I have no hesitation in affirming that no trace of them can be found in the Old Testament."

With reference to the next term examined, viz., *arets* earth, we find that the definitions of "Archaia" mainly accord with those of the most esteemed Hebrew writers:—

"It is indeed expressly restricted to the dry land in verse 10th; but as in the case of the parallel limitation of the word heaven, we may consider this as a hint that its previous meaning is more extended. That it really is so, appears from the following considerations: 1. It includes the deep, or the material from which the sea and atmosphere were afterwards formed. 2. The subsequent verses show at the period in question no dry land existed."

We would wish to add with reference to this word, that the *Vav* which is joined to *arets*, at the commencement of verse 2, should not be taken for what Gesenius calls Vav consecutive or continuative of discourse. This *Vav* which is called by the old Hebrew Grammarians ו' ההפוך Vav conversive, must not be confounded with ו' החיבור the conjunctive or disjunctive Vav, the position and punctuation of which sufficiently designate it. In the instance before us, seeing that it is pointed with (:) *sheva*, has the disjunctive tonic accent *Rebiang* and is before a noun, we should regard it as disjunctive and translate it as the Common Version does in the parallel instance Gen. iii. 1. והנחש *vehanachash*, &c., "*Now* the serpent." Here, as in Gen. i. 2, it is pointed with *sheva*, has a disjunctive accent and isbefore a noun with the definite article. It may also be rendered "but," as the Anglican version very frequently and properly translates.

In this connexion we would quote the following pertinent remarks of an able critic. "There is no need of supposing that the first and second verses relate to immediately continuous events. Moses frequently places events together, though there were long intervals between. Thus in the second chapter of Exodus the first verse begins: 'And there went a man of the house Levi, and took to wife a daughter of Levi.' The second verse proceeds: 'And the woman conceived and bare a son, and when she saw that he was a goodly child, she hid him three months.' The connective *and* the Hebrew *vav* is the same as between the first and second verses of Gen. i. There is as much reason for supposing the events to be consecutive (i. e. *immediately* consecutive) in the one case as in the other. Now the child alluded to, as being born after this marriage was Moses. But it appears he had a sister old enough to watch over the ark. He had also an older brother, Aaron. There was then, an interval of some years between the first and second verses, of which no intimation is given. We find it in other ways. It is the style of the Bible thus to compress vast intervals into connected passages. No notice is given of things which it is not necessary to state." We will only add in addition to this that Gesenius himself points out to us that the books of Esther and Ruth commence with Vav—which surely cannot convey a consecution of sentences, and in his examples of Vav consecutive, specially omits the second verse of Genesis 1st.

With Dr. Dawson's views respecting the word *Elohim* we cannot agree. Nor can we join in his "wonder at the squeamishness which induced even Calvin to make light" of the testimony to the doctrine of the Trinity presented in the grammatical form of this word. Being of those who consider that this doctrine should not require the support which involves a violation of the evident rules of Hebrew grammar, we rather wonder that Christian theologians should not more generally have thought like Calvin; though it must be admitted that more modern critical theologians pretty generally understand that it is entirely on other grounds that this doctrine must rest for support. Thus, whenever the plural termination of Elohim has been appealed to in the good old fashioned controversies (*sic*) in those happy days when theologians roasted each other at the stake, partly for the honor of God and partly for daring to controvert in controversies to which they had been invited to enter in a spirit of brotherhood and candor as then understood, we find that an appeal to the plural termination of Elohim generally *proved too much*, especially with those, who, like the Jews, maintained it to be a *pluralis excellentiæ*, and that the same termination was applied to individual man, or in other words, to nouns that are evidently to be understood in the singular number thus, e.g. Exodus 21,4; 22,11, where the plural "masters" (*adonav*) and "owners" (*bengalav*) are unquestionably used for the singular form. But besides this, it would be difficult to disprove by fair reasoning the fact that, even if this termination does teach a plurality of persons or natures in the god-head, there is nothing in its grammatical form to indicate that *three* persons are meant more than four, five, or a myriad. This fact has mainly originated the idea of the "primitive polytheism supposed by certain rationalists," referred to by Dr. Dawson. Still less is there anything in the grammatical form of this word to indicate the doctrine of a trinity in unity. And as it is with strict gramma-

tical analysis and not with the theological interpretation of either Church or Synagogue that we have now to do, we are constrained to say that in this instance Dr. Dawson has not exhibited the same strictly scientific exegesis which has delighted and convinced us in other portions of his book. We readily admit, however, that this is the only instance wherein we observe that Dr. Dawson makes philology and religion coincide in a way which he almost immediately afterwards condemns (p.74), when geology and religion are made, or rather forced to coincide by others. Writing of the Desolate Void, he finds that "truth" obliges him to throw aside—which we are very willing he should—"the convenient method of reconciliation sanctioned by Chalmers, Smith, Harris, King, Hitchcock and many other great or respectable names, and on which so many good men complacently rest," because a strict exegesis will not permit him, "suddenly to restrict" the term *arets* in the 2nd verse to a limited region, when in the first it must mean the whole world. "Is not this supposition," he asks, "contrary not only to sound principles of interpretation, but also to common sense; and would it not tend to render worthless the testimony of a writer to whose diction such inaccuracy must be ascribed. It is in truth to me beyond measure surprising that such a view could ever have obtained currency; and I fear it is to be attributed to a determination, at all hazards and with any amount of to make geology and religion coincide."

The next word noticed is *Yom*. No doubt, the prevalent view of this word has always been that it expresses the natural day, a period of four-and-twenty hours. The contrary opinion that in the case before us it means a long pretended period has, however, been held at a very early date by Jewish authorities. Nachmanides some seven centuries since asserts that "the days of the Creator are to be understood as of a thousand years each." This view is also maintained by R. Samuel d'Urbino in his "*Okel Monged*," and by the most esteemed commentator, Abarbanel, as may be seen in his interesting remarks on Gen. ii., 4, where he says "it is verified by holy writ, accepted from the words of our sages in many places, and the ancient philosophers also believed in it." The thousand years here referred to may perhaps be taken to mean a long indefinite period, and so employed by Moses himself in Psalm xc., 4: "For a thousand years in thy sight are but as yesterday when it hath passed." Kimchi thus comments on this passage: "Our pious sages refer the expression in thy sight to God and not to the children of men just addressed, and they say that the *day of the Eternal is a thousand years*." Compared with this remark of Kimchi, we may cite the following passage quoted by Dr. Dawson on p. 124, from the Institutes of Menu: "*One thousand divine ages* (equal to more than four millions of human years (*are a day of Brahma the Creator*." Beside the commentators just mentioned we find that Rashi (eleventh century) and Maimonides (twelfth century) whose dicta are in the present day more highly respected by Jews than those of their other writers; who are, in fact, the chief authorities of the Synagogue in matters of interpretation, both unite in asserting that all things were created *on the first* yom or day, but that their proper natures and due development were only afforded them during the other five *Yamim*. These references to some of the most esteemed authorities of the Hebrews will show that this people have by no

means universally regarded the work of creation as having been performed in six days, days of twenty-four hours each, or that they have universally understood *Yom* in the sense of an ordinary day. Their maxims "Search and re-search the Scriptures for all shall be found there," and "Investigate and you shall receive a reward" would warrant us in the conclusion that they would not regard even a very general accord of Christian and Jewish theologians in former times as a fact that should preclude further investigation in the present day. Their involuntary testimony, and that of St. Augustin and other Christian writers quoted on pp. 105 and 106 of "Archaia," offered before geology had any existence among the sciences, will be sufficient reply to those who object that but for the developements of geology, theologians would never have discovered that *Yom* means a long extended period.

Preliminary to a statement of the manner in which Dr. Dawson handles this part of his subject, it is not our desire to exhibit the evidences against the literal-day theory, many of which may be found in Lewis's interesting work on the "Six days of Creation." Yet, for our own part, we went to the perusal of this portion of "Archaia" very seriously impressed with many insurmountable difficulties in this theory, among which was a consideration of the work of the third day, when there took place the transfer of the waters to their beds (which alone would occupy a longer period than twenty-four hours) the elevations of the land, and the earth able to produce vegetation, all within a period utterly inadequate, unless accounted for by miracle, which course, as has been more than once shown, we must reject as not being either in harmony with God's general operations nor with the regular and orderly progress of events in the narrative. And we think it difficult to conceive of aught but this same regular and orderly progress when we proceed from the surface of our earth downward through the various strata which the convulsions of the outer crust of the globe have revealed to us, and mark how the various strata exhibit their own peculiar relics, the *debris* of animal creations—succeeding strata differing from preceding,—so that the plants and animals of the lowest strata—the Palæozoic—differ from any existing form—when we find these fragments of once living plants and animals in all states of preservation from the exhumed "Mastodons of Siberia with hair and flesh yet remaining, to the stony casts from which all traces of organic matter have long since disappeared. And when we mark the gradual progress of animal and vegetable forms until existing genera and species begin to appear; instead of recognising one sudden creation, we are led to bow our head in awe and reverence at the mighty divine plan thus partially revealed to us and which, extending through unknown ages, has involved many successive creations and distinctions, and with a gradual majestic progress has reached the present order of creation, crowned by man who "was made but little less than Elohim."

Turning now to Dr. Dawson's views respecting *yom* we find, in the first place, that by the Creator's naming his works, such as darkness, expanse, &c., he thinks the important purpose of a verbal definition was to be served; from which he concludes that the day of creation is not the day of popular speech. He notices that it is seldom used in scripture for the whole twenty-four hours of the earth's revolution, and though he does not consider it "a statement of

the whole truth" to affirm, like some, that the civil day is the ordinary meaning of the term, he admits that this is one of its ordinary meanings. He shows from many passages, that *yom* means an indefinite period, and replies to the objection that *beyom* in Gen. ii. 4, is used adverbially, removing all grounds of future objections by citing other examples where the word cannot be so used. A term equally precise as *yom* he thinks could not be found in the Hebrew Vocabulary to express a long creative period. He proceeds on page 106 to reply to the objections made against this view; and first, that the time of creation is given as a reason for the observance of the seventh day as a Sabbath. This argument he answers, and finally disposes of by a quotation from Hugh Miller; to which may be added that we do not find that God rested on the seventh day and thereafter resumed his work; but as his Sabbath period is extended even until now from what we can learn to the contrary in scripture, his six working periods must also have been extended; and our week of seven days is merely symbolical of the Creator's week of seven extended periods—like the weeks of Daniel are symbolical of extended periods. The Scriptures do not add "The evening and the morning were the seventh day" because the termination of this seventh period is among those "secret things that belong to the Eternal". Our author next considers the objection that evening and morning are ascribed to the first day. Here, while he admits that the explanation of these terms is attended with some difficulty, he shows that this difficulty is not at all lessened by narrowing the day to twenty-four hours. He notices some other objections "as specimens of the learned trifles which pass current among writers on this subject, much to the detriment of sound scriptural literature." The way in which he replies to one objection we shall more fully notice, because we know that it is very commonly made by thoughtful persons, and is not confined to any particular class of religionists, as we find it referred to in the Jewish translation of Genesis already mentioned in these remarks. Dr. Dawson states it thus on p. 117.

"Though there is a general resemblance between the order of creation as described in Genesis and by geology, yet when we look at the details of the creation of the organic world, as required by this hypothesis, we find manifest discrepancy. Thus the Bible represents plants only to have been created on the third day, and animals not till the fifth; and hence at least the lower half of the fossiliferous rocks ought to contain nothing but vegetables. Whereas in fact the lower half of these rocks, all below the carboniferous, although abounding in animals, contain scarcely any plants, and these in the lowest strata fucoids or sea-weeds. But the Mosaic account evidently describes flowering and seed-bearing plants, not flowerless and seedless algæ. Again, reptiles are described in Genesis as created on the fifth day; but reptilia and batrachians existed as early as the time when the lower carboniferous and even old red sandstone were in course of deposition, as their tracks on those rocks in Nova Scotia and Pennsylvania evince. Besides these footprints, bones of a reptile (*Archegosaurus*) have been found in the coal measures of Bavaria. Other reptilian animals (*Dendrerpeton Acadianum* and *Baphetes planiceps*) have been found in the coal formation of Nova Scotia; Batrachian remains have been observed in British coal shales, and in those of Ohio; and the skeleton of a reptile (*Telerpeton*) has been found in the old Red Sandstone of Morayshire. In short, if we maintain that Moses describes fossils as well as living species, we find discrepancy instead of correspondence between his order of creation and that of geology.' In this objection it is assumed that the geological history of the earth goes back to the

third day of the creation, or, in other words, to the dawn of organic life. None of the greater authorities in geology would, however, now venture to make such an assertion, and the progress of geology is rapidly making the contrary more and more probable. The fact is, that on the supposition that the days of creation are long periods, the whole series of the fossiliferous rocks belongs to the fifth and sixth days, and that for the early plant creation of the third day, and the great physical changes of the fourth, geology has nothing as yet to show, except a mass of metamorphosed Azoic rocks which have hitherto yielded no fossils."

Dr. Dawson quotes Professor Dana in further reply to these objections and incidentally shows that Dr. Buckland's theory of placing the great events of Geology between the first and second verses of the Mosaic account, and which met with so much favor twenty-five years since, is now pretty well disproved by Geology as he shows in a valuable article on the Human and Tertiary periods in Appendix B. He next devotes himself to a statement of the external evidences, which are, the evidently progressive character of creation, the continuance of God's rest, or seventh day, and the testimony of many ancient philosophical and religious systems. The illustration of these topics concludes this most important chapter of "Archaia".

The following chapters of this book have also their special interest; but we have extended our review of the former portions to such an unwonted length, that we cannot do more than recommend them to the reader's attentive perusal. Especially do we recommend the important chapter on the unity of the Human Race which we have found in the highest degree satisfactory and satisfying. Indeed we rise from the perusal of "Archaia" with the conviction that its author has executed the whole of his task well.—Well, because he has written in accordance with the golden Spanish proverb "Ciencia es locura, si buen senso no la cura;" —and our author's science is not that "madness" and folly which treats the word of God as of less account than the word of man; but it exhibits the higher "good sense" the truer wisdom, the better spirit, even that which animated David when he exclaimed "How do I love thy law." Showing throughout that the cosmogony of Moses, or rather of God, if properly studied and understood, presents the only true account of the origin of the Universe, that its ancient details are in strict accordance with the teachings of modern science;—this book further teaches us that we must not hope to attain a correct understanding of the scientific passages of Scripture till the sciences themselves and especially Geology are sufficiently advanced to enable us fully to explain them. Our author has executed his task well, because his "Studies" of the Hebrew Scriptures have been directed by a proper adherence to those rules of exegesis which revelation and philosophy have alike instituted. "All that is highest of every species," says F. Schlegel, "can only be apprehended as it is at the same time both logical and symbolical." A strict application of this principle has evidently guided Dr. Dawson in his interpretation of the sacred record. He first determines the meaning of the term, either from the definition of the inspired writer himself, or from traditional interpretation, and then he adheres to the meaning of the word till either Moses himself gives a new definition, or manifestly uses the word in a new sense. It may be thought from what has been written that "Archaia" is an abstruse "dry book" not

likely to be read with as much pleasure as profit by the general reader. The reverse, however, is really the case. Its details and arguments are relieved by imagination and poetry, and its style is always elegant, glowing with the author's impassioned love of his subject. We marked as we read some fervidly eloquent passages; but we found that these so increased as we went on, and we have already occupied so much space, that again we cannot do more than refer the reader to the book itself.

In conclusion we may be permitted to say that without desiring unduly to eulogise Dr. Dawson whose attainments as an educationist and *littérateur* are sufficiently well known, we cannot but congratulate ourselves that this last interesting production of his pen has appeared in our own community. It augurs well for the future of Canadian Literature and Science. It speaks especially well for the important educational Institution over which Dr. Dawson presides. It proves that like a true *Alma Mater*, she is nursing the infancy, or perhaps we should rather say maturing into strength the very youngest of the Sciences committed to her protection, while she does not omit to cherish the older and more self-reliant objects of her care—among these, the study of the language in which Moses wrote, and which in his Inaugural Discourse, Dr. Dawson advocates with an equal zeal. It shows plainly, indisputably, that the comprehensive and liberal basis on which the University of McGill College has been placed by her enlightened Governors has been the proper and true one; and though it may have banished religious tests and all sectarianism at the loud call of the times, it has not therefore excluded the spirit of true piety. No! to ARCHAIA let the appeal be made, and then let the admission follow that in no educational establishment in the old world or in the new, could the love of the Supreme and a veneration for his word be more properly preached, more warmly inculcated than they have been in this work of Principal Dawson who is neither Priest, Minister nor Rabbi, but our man of science of whom the world, not less than our own conviction, tells us we have just cause to be proud.

A word more as to the mechanical execution of the book. This has pleased us very much. It really would seem as if publishers and printers had taken counsel together concerning the excellence of the author's work, and had determined that theirs should prove a worthy adjunct. The result of their efforts is very creditable to them. We congratulate Messrs. Dawson & Son, who are also the spirited publishers of the "Canadian Naturalist" on this new proof of their enterprise, and are glad to think that a very extensive circulation, both at home and abroad, will be its reward. Both printing and binding are in Mr. Lovell's usual style of excellence and good taste, and proves the capabilities of his house for producing a handsome volume to be inferior to none on this continent.

PERISCOPIC DEPARTMENT.

SURGERY.

ON GANGRENOUS PHLEGMON, AND DIFFUSED SUPPURATING PHLEGMON.

By Professor Thiry.

In a recent lecture, delivered by M. Thiry at the Brussels University, he referred to the confounding by authors of different pathological conditions under the terms erysipelatous phlegmon, gangrenous phlegmon, phlegmonous erysipelas, and diffused phlegmon, treating of these as if they were one and the same affection. In the view of the case, *erysipelatous phlegmon* is an inflammation of the cellular tissue, followed by erysipelas or inflammation of the suprajacent skin—the inflammation spreading from within outwards. It is just the contrary in *phlegmonous erysipelas*, in which inflammation commencing in the skin extends to the subjacent cellular tissue. The two conditions differ only in their primary seat and mode of appearance; and while erysipelatous phlegmon exists as a local manifestation prior to the appearance of febrile symptoms, these precede, or at all events, accompany the establishment of phlegmonous erysipelas. After some days the two affections lead to the same pathological consequence, and from that period their progress, duration, and treatment, are identical.

The general principles for the treatment of inflammation and erysipelas being here applicable, M. Thiry dwells no longer upon this part of the subject but, next calls attention to the differences recognisable between *gangrenous phlegmon* and *diffuse suppurating phlegmon*. Gangrenous phlegmon is inflammation of the cellular tissue terminating in gangrene; while diffused suppurating phlegmon is inflammation terminating in suppuration, and becoming propagated from point to point to a distance from its origin, by virtue of special anatomical dispositions. The pathognomic character of the former is immediate gangrene, and that of the latter suppuration—gangrene, when it does appear being a complication. Gangrenous phlegmon almost always arises form a general cause, and diffused phlegmon from a local one. The latter is only met with when resisting aponeuroses present obstacles to the easy flow of pus, while gangrenous phlegmon may be domiciled anywhere. The symptoms of the two affections have little resemblance; their course is entirely different, and the treatment they require, at all events at first, is of an opposite character.

Anatomical Characters.—When an incision is made into a *gangrenous phlegmon* at an early period, an abundant serosity is found infiltrated into the cellular tissue, giving this, from the distension produced, an appearance of considerable thickening. The cellular tissue presents a characteristic reddish appearance. At certain points it becomes torn and detached in the form of small elongated masses, which may be drawn out in shreds of varying length, exhaling a fetid, gangrenous odour. At a more advanced stage pus is produced, this being the signal of the elimination of the eschars. The skin covering the phlegmon, becomes in its turn gangrened in more or less extent, owing to the destruction of the nutrient vessels emerging from the cellular tissue. Finally, there remains, after the expulsion of the mortified tissue, an ulcerated surface, with detached edges—the skin continuing attached to the subjacent parts only by organized bridles, which must be carefully preserved, or the integuments will be entirely deprived of nutrition. When we pass the bistoury into a commencing *diffused phlegmon* we find the cellular tissue tumified and infiltrated, and vessels containing a reddish fluid traverse it in all directions. The sanguinolent serosity soon gives place to pus in a state of infiltration, which at a later period, the meshes of the cellular tissue becoming torn, becomes col-

lected in several little centres. The destructive action going on, these at last become confounded together, and constitute a large irregular cavity, traversed here and there by some cellular partitions. Gangrenous phlegmon may arise wherever there is cellular tissue, but is more commonly met with at the extremities than on the trunk. Diffuse phlegmon is essentially subaponeurotic, and is very often met with in the hand and forearm. It is usually developed along the vessels or nerves or muscular and tendinous sheaths; and sometimes suddenly arises close to a comminutive fracture, or a wound of a joint, especially the knee-joint.

Etiology.—In general *gangrenous phlegmon* is observed only under the influence of causes affecting the entire economy, as, for example, the slow poisoning following a dissection wound. Progressive debility, moral affections gradually undermining the system, or a considerable anasarca may give rise to it, as also may urinary fistulæ or a fistula in ano, when inducing a general "toxicohæmia." When it follows external violence, a careful examination almost always shows that this has only served to localise an affection which otherwise would have manifested itself in some other region. *Diffused phlegmon* is a consequence of an external irritant, wounds, contusions, injuries of bones, or the presence of foreign bodies. When it arises spontaneously, without apparent cause, it seems still to precede rather than to follow the general morbid conditions observed.

Symptoms.—In *gangrenous phlegmon* general spmptoms of a very alarming character precede the local manifestations. These latter present three distinct periods. In the first there is pain of a severe, tense, pungent character; the redness soon assumes a deep brown shade, the swelling is considerable, and the skin, easily depressed by the finger, becomes covered with sanguinolent phlyctenæ. Next, black, gangrenous spots appear here and there, and there is a false sensation of fluctuation over a great extent, frequently accompanied by crepitation. The second stage is one of bursting and elimination, and the third is one of reparation, always a tedious process. In *diffused phlegmon* the local symptoms first appear. The finger, exploring the seat of pain, meets with a doughy resistance, and the skin assumes a rose tint. After these signs have manifested themselves, shivering ushers in general symptoms; and the pain, at first localized irradiates along the limb, and becomes pulsatile. The swelling assumes larger and larger proportions, until it may involve the whole limb, and it is characterized by excessive tension. The tendinous sheaths and vessels have acted as conductors to the diseased process, and are now all dissected out by the destruction of the subaponeurotic cellular tissue; and after the ulceration of the surface a vast irregular cavity is exposed. After the evacuation of the pus, naturally or artificially, the general symptoms, which had acquired a frightful intensity, subside. Both affections are acute, and of prolonged duration; but, setting aside all complications, gangrenous phlegmon occupies most time. Its devastations are greater, and the general condition is more difficult to combat. Taken altogether, it is a much more serious affection than diffuse phlegmon.

Treatment.—The formation of *gangrenous phlegmon*, when announced by general symptoms, cannot be prevented, do what the Surgeon will, he having only the power of limiting it, and favouring its termination. *Diffuse phlegmon* may be attacked with advantage from the very commencement, and its establishment may be prevented. Rarely, if ever, can antiphlogistics, whether general or local, be employed in gangrenous phlegmon, adding as they usually would, to the already too great debility of the patient. As soon as the disease or traumatic lesion upon which the *gangrenous phlegmon* depends has been treated, quinine should be at once resorted to. After a few days, when any suburral condition of the alimentary canal is present, a grain or two of tartar emetic, divided into two or three doses, and given in the form of lavement, is of great advantage. Dupuytren practised numerous and large incisions at an early stage, but the practise is not of use except when strangulation prevails; and even then the incisions, though extensive, should not be multiplied, or the intervening flaps of skin will themselves become gangrened, owing to the circulation and nutrition proving insuffi-

cient. They are usually only required when suppuration is appreciable. After their employment, cataplasms, tepid, aromatised baths, or aromatic injections [(as tinctures of iodine, myrrh, or benzoin, spirit of camphor, and Labarraque's solution), are to be continued until complete elimination has taken place. Tonics and a good diet are also required.

In the case of *diffuse phlegmon* we should at once without hesitation, make a large and deep incision, comprising even a healthy tissue. The incision is to be followed by a tepid, emollient bath; and the part having been covered with mercurial ointment, an emollient cataplasm is to be applied, resorting also to compression of the limb from its extremity upwards to the level of the incision. If the timidity of the patient opposes early incision, a large number of leeches should be applied, and mercurial frictions, followed by a cataplasm, may follow. In the robust, bleeding may be performed, although usually a few grains of tartar emetic will prove of more eventual benefit, and it may be employed in larger and longer-continued doses than in the case of gangrenous phlegmon. If the Surgeon has not anticipated the formation of pus, he must, as soon as this is recognised, evacuate it by a deep and large incision, so as to prevent its destructive burrowing. After the evacuation the part is placed in a tepid bath. Two or three times a day mercurial frictions are applied, the part then being covered by a poultice, or enveloped in a bandage.—*Presse Médicale Belge.*

CASE OF COMPOUND COMMINUTED FRACTURE OF THE PATELLA.

By J. Livergood. M. D. Lancaster, Pa.

On the nineteenth day of February, 1859, a young man, named Patrick McKeefer, aged about thirty-five years, was admitted into the Lancaster County Hospital under the following circumstances:—

About eight or ten weeks previous to his admission, while engaged in driving a stage he was kicked by one of his horses on the left patella, producing a compound comminuted fracture of that bone. At the time of the accident, and for some time subsequently, the hemorrhage from the wound was profuse. He was brought to this city and placed in charge of a physician, but after being under treatment about four weeks, he very imprudently left his bed without the knowledge or consent of his professional attendant, and attempted, with the assistance of a crutch, to walk upon his limb. The result of his temerity, of course, was disastrous; the imperfectly united fragments were again widely separated, and the joint became stiff, swollen and excessively painful. He was again placed under treatment, but circumstances occurred rendering his removal to the hospital necessary.

On his admission I found the knee stiff, very slightly flexed, exceedingly sensitive upon the least motion, and so much distended by an accumulation of fluid as to make it almost impossible to distinguish the number and situation of the fractured portions of the patella. The slightest palpation of the tumefied mass afforded to the hand, very perceptibly. the sense of fluctuation, and the most prominent part of the swelling was on the anterior part of the joint. His general health was excellent.

Although almost every expedient had been exhausted, previously to his entrance into the hospital, with a view of securing the absorption of the fluid contained in the joint and a reunion of the fractured bone, it was deemed advisable, after consultation with my colleagues, to make another attempt to preserve the patient's limb. I therefore gave him alterative doses of calomel and opium, applied tincture of iodine, and carefully bandaged the leg and laid it in a splint. This course of treatment was sedulously persevered in for about one week, but there appearing to be no visible improvement, and as the fluid was beginning to burrow under the extensor muscles of the thigh, I at once made an incision into the joint and evacuated about twelve ounces of pus.

Feb. 25th. Has not rested well; no appetite; and the accumulation of fluid is nearly as great as before the joint had been opened. Made another incision on the side opposite to the first one, and removed ten ounces of purulent matter. As the matter had invaded the interstices of the muscles of the thigh, there was considerable handling and compression necessary in order to dislodge it from the sinuses in which it was deposited. Ordered tonics, generous diet, and porter daily.

March 4th. A profuse sanious and unhealthy discharge going on from both incisions and the synoval fluid has been for some time escaping. Notwithstanding the patient's health remains unimpaired, his appetite is good, and his sleep is tolerably refreshing. At this stage of the case I suggested the propriety of amputating the leg, keeping in mind the great length of time since the injury was received—the exhausting effect of the profuse and unhealthy discharge then going on—the many futile efforts, thus far made to restore the limb to usefulness—and recollecting that South, in his translation of Chelius, tells us that "compound fracture of the knee-cap *almost invariably* requires amputation, as the injury producing it is so severe that there can be little expectation of a satisfactory issue." I considered this case requiring and justifying the use of the knife. But the patient not being willing to submit to this supposed *dernier resort*, I continued the treatment as heretofore, and at the expiration of my term of hospital duty (first of May), I had the unfeigned pleasure of seeing my patient discharged well, with no other inconvenience than that of a slightly anchylosed knee. He walks without a staff, is engaged again in driving a stage, and says his leg is "nearly as good as ever."

The above is a condensed account of this case as detailed in a paper read before the Lancaster City Medical Society, and it furnishes us with another proof of the propriety, when there is a preternatural accumulation of fluid in the knee-joint, of making an incision and evacuating it. In the August number of the *Lancet*, there are recorded three or four cases illustrating the feasibility of this procedure, and some of the cases, in many respects analogous to the one above related.

MEDICINE.

THE HYPODERMIC EMPLOYMENT OF ATROPINE.

From the Foreign Correspondence of the Lancet, October 22, 1859.

At the Hôpital la Charité, Paris) M. Briquet, one of the Physicians of that Institution has been experimenting to some extent with the sulphate of atropine in the treatment of deep seated neuralgic affections. These experiments I have followed with much interest and attention, but I regret to state that the result has not been very satisfactory. He employs the atropine in the form of a weak solution, the proportion being 60 centigrammes of the sulphate to 30 grammes of water. The following is his mode of procedure:—A very fine trocar armed with a canula is plunged into the tissues in the direction of the affected nerve, and as near the supposed seat of the diseased portion of it as possible; the trocar is then withdrawn, and a small syringe previously charged with the atropine solution is then fitted on to the canula—a small screw attached to this syringe so acts on the piston that at each turn of the former one drop passes into the tissues. In fact, the entire apparatus is very similar to, and perhaps identical with that invented by Mr. Pravaz, for the injection into varicose veins of the perchloride of iron, with a view to their obliteration; and seems exceedingly well adapted to the purpose. Eight drops of the solution are generally injected by M. Briquet as the minimum, but the number of drops is increased to fourteen or fifteen in the course of a given time. Should no decided impression be made on the neuralgic pains, in those cases where he employs it, after seven or eight applications he abandons this agent for some other plan

of treatment. I have generally observed that the opposition shown by the patients to its use is very considerable, in consequence of the disagreeable, and somewhat painful feelings, caused by the atropine, and a good deal of coaxing on the part of the Physician is required to induce them to submit to it. I do not allude to the local effects of the atropine, for these are but trifling, consisting simply of sensation of heat and smarting; but to those effects produced on the system generally,—most commonly in the course of half-an-hour after each injection, the patient complains of soreness and dryness of the throat, rendering deglutition difficult; the breathing is more or less affected, there is pain and difficulty in urinating, headache, and double vision, with confusion of ideas; in fact, all the constitutional symptoms which are observed to follow on a very large dose of belladonna. These peculiar effects last for one or two hours, and are succeeded by a feeling of general *malaise*, accompanied with loss of appetite, which continues even during the following day. From one to two days are generally allowed to intervene between the applications. I have seen this system of treatment employed in some ten or twelve cases of sciatica, but with the exception of a *partial* remission of the neuralgic pains in some three or four of them, no amelioration was observed to follow it. I have been informed, that at La Pitié, M. Becquerel has been more fortunate than his *confrère* M. Briquet has been at La Charité, in his experiments with this remedy; but not having been an eye-witness of those conducted by the former, I cannot speak positively on the point. In some future communication I may take an opportunity of reverting to the subject. I have also recently seen the same agent employed according to this hypodermic method, in a case of obstinate and prolonged contraction of the muscles of the leg and foot, following on an attack of hysteria. As the history of the case is full of interest, I shall give it in a few words. The patient, a girl, twenty years of age, of nervo-sanguine temperament, has been subject to fits of hysteria since the age of fifteen. Her mother, who died when the patient was young, is represented as having been quick-tempered, and very irascible; and the father is at this moment in a madhouse, where he has been an inmate for some years. She has consequently inherited a tendency to nervous disorders from both parents. Within the last year the fits have become, not only more frequent, but also more severe; and they now assume the epileptic form. Six months ago, after a paroxysm of unusual severity, she became quite blind, and during nine weeks could hardly distinguish night from day; her sight, however, gradually returned, and is now as perfect as ever. On another occasion, after a second severe paroxysm, she completely lost the power of speech, but her voice was soon restored under the influence of Faradisation. Two months ago, the time at which she was received into the ward of M. Briquet, she had a third severe attack, followed, not as during the previous ones, by loss of sight or voice, but by complete anæsthesia, or loss of sensibility, of one entire side of the body, and by violent and continued contraction of the flexor muscles of the right foot, giving it the form of the varus club-foot. The anæthesia was cured by Faradisation; but all efforts made to restore the foot to its normal position were unavailing. The injection of the sulphate of atropine was tried for about a fortnight on every alternate day, and carried to the extent of fifteen drops at a time, with a view to paralyse the contracted muscles, but not the slightest benefit resulted. Faradisation was then vigorously employed almost daily for a week or ten days, and was in the end so far successful in relaxing the contracted muscles as to permit of the foot being placed almost in its natural position, in which it was retained by means of a mechanical apparatus. I may mention, however, that as soon as the apparatus was removed there was still a tendency to the recurrence of the muscular contraction, although not to the same extent as before the Faridisation was employed. It is more than probable, that had the patient remained under treatment some time longer, a permanent cure might have been the result; but, tired of the *régime* of the Hospital, she urgently requested her discharge, which was accorded her.

PERICARDITIS AFTER SCARLATINA ANGINOSA.

Serious inflammations are by no means unusual occurrences in scarlatina. We lately observed a case of pericarditis supervening upon the anginose form of the disease, of which the following is a brief account from the notes of Mr. Schollick, one of Dr. Farre's clinical clerks :—

The patient is a lad aged seventeen years, in Luke ward of St Bartholomew's Hospital. He had a well marked attack of scarlet fever with sore-throat, from which he had become convalescent, when he felt pain in his chest on the evening of the 8th October. He was admitted into the hospital on the 10th, under Dr. Farre's care, when a pericardial friction sound was heard over the nipple; the urine was not albuminous. A blister was ordered over the seat of the pain, and a mixture of the acetates of ammonia and potass (fifteen grains of the latter), combined with tincture of henbane, three times a day. By the next day the pain had disappeared; he slept well; his skin was moist and cool; pulse 78; tongue clean, but rather red; urine cloudy from the urate of ammonia, but no albumen present. The friction sound was still audible over the nipple. On the 13th the sound had ceased, and the urine was found slightly albuminous: the heart's action was stronger than usual. The increased action of the heart continued for a few days longer, and gradually subsided to its natural standard, the friction sound had entirely disappeared. No more pain was felt, and he made a good recovery, and left the Hospital.

The good termination of the case may in a great measure be attributed to its supervening upon instead of being coincident with the scarlet fever. There were no symptoms of hydrops pericardii. The most dangerous complications in scarlet fever are those affecting the heart and brain; but all the serous cavities are liable to become dropsical.—*Lancet.*

BRONZED SKIN.—DEATH.—BOTH SUPRA-RENAL CAPSULES DISORGANISED.

(Under the care of Dr. PAVY.)

A woman, aged 26, was admitted into Lydia's ward, under the care of Dr. Pavy, on July 27. Her skin presented a marked example of the appearances characteristic of the morbus Addisonii, and was at once recognised as such by several independent observers. She had been engaged in service, and brought with her a letter of recommendation from a gentleman in whose house she had formerly lived. He used the expression,—"She seems to have been overworked, and is now suffering either from heart-disease, or impaired digestive powers." We cite this in order to show the impression which her constitutional symptoms had conveyed to an intelligent but non-Medical observer.

It appeared that the change of color had been noticed as gradually increasing for eight months past. There had been no jaundice, and the sclerotics were of a pearly whiteness. Her face, neck, and shoulders were of a peculiar dirty olive tint. On other parts of the body the color was not specially remarkable. She was not much emaciated. While being questioned certain twitchings were noticed resembling those of chorea. She had been more or less ill for about a year, feeling weak and ailing, but without being able to specify any particular complaint. She attributed her ailments to overwork. Soon after her admission vomiting set in, which persisted in spite of remedies, and produced great prostration. Stimulants were freely used, but death took place on the 30th July, four days after admission. At the autopsy no morbid appearances were found, except in the supra-renal capsules. The following are the particulars of it as taken by Mr. Moxon, the Demonstrator of Anatomy.

Autopsy, thirty-two hours after death.—External appearances—The hair and eyes dark; complexion very dark; brown as bistre about the neck; axillæ; flexures of elbow-joints;

elsewere, in parts, irregularly so, especially on the forehead, which was patched irregularly with darker parts on a sufficiently dark ground. The patient's body was very well developed and in a good condition, with plump and muscular limbs. The lungs were dark, like all the organs, which showed much the color of the blood, and there was static engorgement of the posterior parts, but the tissue was healthy. The heart was very soft and dark coloured, but its membrane and valves were free from evidence of disease. The cavities contained clots. The peritoneum was healthy. The mucous membrane of the stomach was normal, except a slight degree of ecchymosis at the cardiac end of the stomach. Intestines were healthy. The liver, except that it was dark in colour and flabby, presented nothing abnormal. To its inner surface was adherent the right suprarenal capsule, which, like its fellow, was embedded and lost in a mass which was bounded externally by lymph, which occupied the cellular tissue originally surrounding the capsule, and infiltrated the muscular structures behind, the whole being a mass of about the size of three segments of an ordinary-sized orange, and roughly of the same shape. In section, the interior presented here and there patches of a yellowish-buff tint, isolated by lymph, in a more or less softened state, in the centre of the capsule. A quantity of encysted puriform fluid was found in the left capsule. They were about equally affected. The kidneys, even when closely in contact with the diseased capsules, were quite unaffected and healthy, their containing fibrous tissues being non-adherent.—*Medical Times.*

APPLICATIONS IN ACNE.

When the affection is slight and recent, after removing all causes which seem to maintain it, we should always commence its treatment by stimulating, spirituous lotions which may be employed tepid or even hot. When very slight, a large teaspoonful of the following solution, added to a glass of tepid water, may be applied night and morning:—℞ Hydr. bichlor. gr. 1; alcohol, q. s.; aq. dest. 100 parts. In certain forms of acne, especially the punctuated and sebaceous, local astringents effect a certain cure. M. Ferrat especially recommends alum or peroxide of iron—℞ Alum, 30 parts; aquæ, 300 parts. ℞ Ferri perox. half-a-part; axung, 30 parts. It will be better to commence with half these strengths, increasing them afterwards. The lotion may be applied night and morning, and the ointment on going to bed. In severe cases, protoiodide of mercury should be substituted for the iron, viz. protoiod. half-a-part, and lard 30 parts. The dose of the protoiodide may be afterwards doubled; and if the cure is long delayed, or imperfect, the bin-iodide must be substituted, employing from one to seven grains every evening. In intense acne we may commence with the bin-iodide.—*Bulletin de Therap.* Tome lvii., p. 270.

PERMANENT IRRIGATION IN WOUNDS.

Professor Nélaton opened his lectures, in the Clinique de l'Ecole de Médecine, by presenting a case before his audience, the progress of which was watched with deep interest during last summer.

A boy of the age of seventeen was brought into the hospital whose left hand had been crushed between two cylinders of a printing machine. All the carpal and metacarpal bones were bruised, the radio-carpal articulation opened, and the extensor tendons lacerated. The hand presented more the appearance of a bundle of disorganised tissues than that of an organised limb. The only circumstance which gave some faint hope of saving it was that most of the arteries escaped being torn. He, therefore tried the plan of *permanent irrigation.* The hand having been put into a piece of gutta percha, moul-

ded so as to keep the lacerated portion in juxtaposition, cold water, conducted by means of a tube from a vessel suspended over the bed, was kept dropping upon the hand for upwards of two months, sphacelated portions being frequently removed, until the hand was in a fit condition to be dressed by means of adhesive plaster. The boy has now the use of his hand, with only partial ancholysis of the wrist and some of the fingers.

In thus exhibiting the effect of permanent irrigation in contused wounds of the extremities, Professor Nélaton remarked that this case is not an exceptional one, but that it was the rule of his daily experience. By that agent he saved many a limb where formerly nothing but amputation would have been thought of. This practice was extensively carried on twenty years ago, and with marked success, by the late eminent army surgeon, M. Baudens, at the Val. de Grâce.—*Paris Corres. London Lancet.*

NARCOTIC SUBCUTANEOUS INJECTION USED INSTEAD OF BLISTERING.

M. Trousseau had, a short time ago, to treat a case of pleuro-pneumony at the Hôtel Dieu, in which the general symptoms were completely absent, the physical signs, however making it plain that the base of the right lung was affected. Rasorian doses of kermes mineral were given—viz., fifteen grains the first day in two-grain pills, to avoid pustulation of the pharynx; one drop of laudanum was also administered with each pill, to prevent vomiting. In the present case, tolerance was established after the sixth pill. This is also the manner in which M. Trousseau gives tartar emetic in Rasorian doses. In the present case the patient complained of very severe pleuritic pain, for which his physician ordered a subcutaneous injection, at the seat of the "stitch," of a solution of sulphate of atropine [one grain to one hundred of water]. Only four drops were injected representing about one-fifteenth of a grain of the salt. The pain disappeared, but returned the next day, when it was intended to renew the injection.—*La Gazette Méd.*

DISCHARGE OF THE APPENDIX VERMIFORMIS FROM THE BOWELS.

Dr. Jackson related this unique case to the BostonMedical Society. A robust farmer, aged 24, after suffering several days from vomiting, and constipation, and symptoms much resembling those of peritonitis became convalescent and passed a substance which proved, on examination, to be without doubt the appendix vermiformis, measuring 3½ inches in length. It was in a fetid, gangrenous condition, and presented several openings. He has continued perfectly well since, a period now of three years. The line of separation is not transverse to the length of the appendix, but quite oblique, and the edges have not the same sloughy appearance which is seen at about an inch from the free extremity.—*Boston Medical Journal*

CASE OF HYDROPHOBIA SUCCESSFULLY TREATED WITH DRACHM DOSES OF CALOMEL.

By John E. H. Ligget, M. D., of Middleburg, Carrol County, Md.

On Monday, the 16th July, 1851, I was requested by George Mearing Esq., of Bruceville, in this county, to visit his coloured girl, Maria, aged about 20 years, whom he supposed to be labouring under the above disease. On my way to Mr. M.'s he gave me the following history of the case: Some sixteen or eighteen days previously this girl, with his little son, eight or nine years of age, was in the yard teasing a young dog that had been unusually dull and morose for a day or two. Whilst holding her naked foot towards him, the dog snapped her in the great toe, and immediately sprang at the child, whom he seized by the arm. The girl ran at once into the house with the child, whose cries

quickly alarmed the family. Upon removing the clothing from his arm, the indentations of the dog's teeth were distinctly visible, but the skin was unbroken; and as the girl said nothing of the dog having snapped her, Mr. M.'s fears were quieted. He at once had the dog chained in an out-house, where, in two or three days, he *died* with all the symptoms of *rabies canina* in its most virulent form. Some three days before I was called, Maria complained of pain in the great toe, extending up the limb towards the body; at the same time, from being a very lively girl, she became dull, moody, taciturn and irritable. Upon being closely pressed by her master, she confessed that the dog had seized her by the toe, and that one of the tusks had penetrated *between the nail and the flesh*, and had drawn blood. Being alarmed, Mr. M. went to Littlestown, Pa., to procure a nostrum (prepared by a noted empiric), which enjoys much celebrity as a *prophylactic* in this disease. Upon procuring the article he was told by the "doctor" that if the disease was near development, she might, whilst taking the medicine, have *one or two "fits,"* which need not alarm him, as it would indicate that the remedy was producing a "proper effect." He must persevere, and she would soon be relieved of all unpleasant symptoms. Upon returning home he found the girl worse, and she now complained of pain in the epigastrium, with slight stiffness of the muscles of the neck. He gave the medicine according to directions, and sure enough, after several hours, she had a *"fit;"* after some time another, and again another. He however, persevered until the following morning, when the medicine had all been taken, and the spasms were increasing, frightfully, in frequency and violence. He then called on me for assistance. I found her condition to be as follows: Her mind is clear, and she is conscious of the approach of the paroxysms, of which she usually gives notice. Countenance anxious and despairing; pain in the epigastrium, radiating towards the spine. Stiffness of cervical muscles increased. Urgent thirst with *inability to swallow fluids*, which are immediately ejected with great force. The tongue is white. Pulse 90, and rather tense. Respiration natural, except during the paroxysms, when it is hurried and laborious. There is *increased salivary secretion*, and she occasionally expectorates, with violence, small quantities of viscid mucus, which appears to be thrown from the fauces. The convulsive paroxysms are frequent, and can at any time be excited by touching her, by a current of air, or by the sight of water or other fluids.

I told her master that the disease was, undoubtedly hydrophobia: that it had uniformly proved fatal under all known systems of treatment, and that as I proposed to pursue a course he might deem hazardous, I should prefer, before commencing it, to have my *diagnosis* fortified by the opinion of another physician. After requesting that Dr. Swope of Taneytown, might be sent for, I scarified and cauterized the toe, directed counter-irritants to the spinal column, and left her.

5 o'clock P. M. Dr. Samuel Swope saw the case with me. We found the paroxysms still increasing. Morbid sensibility of surface excessive. Thirst so greatly increased that she now calls constantly for water, the sight of which excites great horror and immediate spasm. In the intervals complains of pain in the head. Intellect still clear. Pulse 205, tense. Heat of surface somewhat increased. After a careful examination of the case, Dr. Swope concurred in my diagnosis. He also assented to the plan of treatment I proposed, though without any hope of averting the fatal result he anticipated. She was now bled to the amount of ℥ xxxvj, and ordered hydrarg. chlor. mit. ʒ j, to be repeated every *four* hours if the symptoms remain unabated. If the spasms decline in frequency and violence the intervals to be lengthened to *six* or *eight* hours.

17*th*. 8 o'clock A. M. After the exhibition of the calomel last evening she had *one* spasm, after which the spasms ceased until two o'clock this morning, when they returned with much violence. She then took ʒ j, hydrarg. chlor. mit., and had an enema administered (which produced but slight effect), after which the spasms again ceased. She is now, 8 o'clock A. M., lying quiet, though in other respects her symptoms are nearly as they were yesterday evening. Ordered a drachm of calomel, to be followed by an

enema of ol. terebinth. Thirst to be quenched with spoonfuls of *crushed ice*, which she swallows with difficulty, her eyes being closed to avoid the sight of it. She is kept perfectly quiet in a darkened room, and all causes of irritation carefully avoided.

5 o'clock P. M. The bowels have been moved moderately, dejections nearly natural. She has been free from the convulsive paroxysms until within the last hour when they returned, but with less violence. R—Hydrarg, chlor mit. ʒj, to be repeated in eight hours should there be any return of spasm. Continue ice *ad libitum*.

18*th*. Could not visit the patient this morning, but learned from Mr. M. that she had rested quietly since the last dose of calomel. Directed ice to be continued, and the bowels to be moved by enema, ol. terebinth.

4 o'clock P. M. No return of convulsion since last report. Bowels have been freely moved by enemata, dejections green. Pulse 108, small. Tongue heavily coated. Some heat of surface. Complains of burning pain in epigastrium with tenderness on pressure. Thirst still considerable, but dread of fluids and inability to swallow them continue. Symptoms of approaching *ptyalism*. R—Epispast, to epigastrium, and continue ice.

19*th*. 3 o'clock A. M. Patient had a slight spasm yesterday evening shortly after I left, which recurred in half an hour, when her master gave her hydrarg. chlor. mit. ʒss which quieted her till two o'clock this morning, when she complained of violent spasmodic pains in the jaw and inferior extremities, when I was sent for. Ordered Tr. Opii ʒj, to be repeated if necessary. Repeat enema.

5 o'clock P. M. Rested from the effects of the opiate until one o'clock this afternoon, when, complaining of some pain in the jaw, she took tr. opii ʒss, which gave her speedy relief. Blister has drawn well, and greatly relieved the burning at the stomach. Mouth getting decidedly sore. She can now begin to swallow fluids, though with difficulty. Asked for food, and took a little corn gruel. As the bowels have not been opened since last evening, gave her Ol. Ricini ℥j, to be repeated every three or four hours until the bowels are freely moved. Repeat anodyne should there be any nervous commotion.

20*th*. 2 o'clock P. M. Bowels have been freely moved, dejections dark green. Mouth deeply ulcerated but dry, and ulcers rather *livid* in appearance. Has been easy since last evening, and slept pretty well during the night. Has taken corn gruel several times to-day, and can now swallow fluids without much difficulty. Pulse 106, and weak. Exhaustion considerable. Ordered quinia disulph. gr. iij, with acid, sulph. aromat. dilut. gtt. v. every three hours. Gargle the mouth frequently with infusion of white oak bark and alum sweetened with honey.

21*st*. Evening. Salivary glands are discharged freely. Ulcers have assumed a healthy appearance, and she appears to be decidedly improving. Continue treatment.

24*th*. Has continued to improve since last report. She is now lively and cheerful. Appetite good. Evacuations natural. Mouth healing.

The subsequent treatment consisted in the regular administration of nutritious diet, tonics and laxatives, with an occasional anodyne, and she was discharged cured on the 28th.

Remarks.—I related the above case, shortly after its occurrence, to a medical gentleman residing in an adjoining county, whose venerable years and high professional attainments command the respect of all who know him. He expressed the opinion that I was mistaken in my diagnosis, and gave as his reasons—*first*, that the patient was a *female*, and *secondly*, that the case *did not terminate fatally*. He assumed from the *sex* of the patient that it was a case of that protean disease, hysteria, *simulating* hydrophobia. He frankly added that had the patient been a *male*, or had she *died*, he would have felt himself constrained to acknowledge it to have been a case of rabies. Now, as other gentlemen may be inclined to entertain similar objections, it may be proper to endeavour to dispose of them in the outset. And first; Is it true that poisons—animal, vege-

table or mineral—have their action upon the human organization so modified by *sex* that they will produce in the *female* diseases which, although apparently identical with those excited in the *male*, are, nevertheless, mere *counterfeits*, less formidable in their nature and more amenable to the resources af science? Will the virus of the rattlesnake or the viper, or the exhalation from the Pontine marshes, produce in the female affections *similar* in their *phenomena* yet *differing* in their *nature*, from those produced in the male? The records of medicine, so far as I am aware, furnish nothing to sustain such an assumption. Why, then, shall the virus of a rabid animal produce in the female a disease presenting all the appalling characteristics of *hydrophobia*, but which, nevertheless, we must take it for granted is *only hysteria*, because the patient *is* a female? Such a doctrine would forever unsettle our diagnosis, not only in hydrophobia, but in *all other forms of nervous disease* in females. For instance, if a woman receives a wound in a tendinous part, which after some time, is followed by symptoms of *tetanus*, who shall say that it is not, in reality hysteria assuming that disguise? More particularly should the patient recover. That in this case I have reported, the disease was produced by a poison deposited in the wound when inflicted, will I think scarcely be doubted.

The *second* objection presupposes that hydrophobia is *essentially, and in its very nature* incurable. To argue that, because certain diseases have hitherto resisted the best directed efforts of medical science for their relief, they are, therefore, *necessarily incurable*, is to say the least of it, illogical. Our want of success may, more rationally, be attributed to ignorance of the pathological conditions existing in this class of diseases, and consequent inability to employ proper therapeutic agencies for their removal. This is unquestionably, the case in hydrophobia. Then can it be cause of astonishment that in the present state of our knowledge (or rather *ignorance*) of this malady we should be totally at fault in establishing proper indications for its cure?

The views which have forced themselves upon the writer, as being most in conformity with the known phenomena of the disease, are as follows:—

1st. The hydrophobic virus is an *irritant poison* whose action is directed *primarily* and *directly*, on the great nervous centres, producing a perversion of their action upon the entire organization, and thus, *secondarily and indirectly*, deranging the functions of the other organs of animal life.

2d. This virus, when deposited in a wound, remains for an indefinite period of time, locked up at the seat of injury, harmless and inert, until some *exciting cause* (of the nature of which I shall not hazard even a conjecture) occasions it to be *absorbed into the circulation*, whence it is carried to the brain and spinal cord to initiate its work of suffering and death.

3rd The primary effect of the poison on the cerebro-spinal system is to depress its action. This is succeeded by great exaltation of the sensibility and irritability of the nervous system, which progressively increases until there is a total exhaustion of the vital forces, and death results from asthenia.

4th. The dread of water or other fluids results from the suffering produced by the effort to swallow them—such an effort producing violent spasms of the muscles concerned in deglutition.

5th. The increased flow of saliva appears to be a conservative effort of the vis medicatrix to *eliminate the poison from the system* through the glands engaged in its secretion.

This is a condensed statement of the views I have been led to entertain in relation to this disease. A very few observations in explanation and support of them may be permitted me. That the action of the poison is directed primarily on the brain would appear from the fact that, in the *first* stage of the disease, the functions of the circulatory, respiratory, and digestive systems, seem but slightly, if at all, impaired; whilst dulness and pain of the head, dejection of spirits, increased irritability of temper, restlessness, unusual timidity, which causes the patient to start at every sound, with a general feeling of *malaise*, undoubtedly indicate a morbid condition of the nervous centres. That

the symptoms which accompany the *second* stage (and which it is unnecessary to recapitulate) are clearly referable to morbid or perverted *innervation*, is, I presume, unquestionable. The pathological appearances after death, uncertain and inconsistent as they are, bear me out in this conclusion.

Many writers upon this disease suppose that the poison is locked up at the seat of injury during the period of incubation. That it produces its morbid effects upon the system through the medium of the nerves, with the sentient extremities of which it lies in contact; and they generally concur in the opinion that it is *not absorbed*, because no traces of pain, swelling, or tenderness, exist in the lymphatics or absorbent glands. Now, if the hydrophobic virus produces its effects through the nerves with which it is in contact, how shall we account for the long period of incubation between its deposition in the wound and the appearance of the disease? Would it not be more reasonable to suppose it would *act at once* upon coming in contact with the nervous filaments, especially as from recent laceration their sensibility and excitability would be morbidly increased? The absence of disease in the absorbent system will not militate against the doctrine of absorption if the hypothesis be admitted that the poison is an irritant whose effects are exerted *directly* upon the nervous centres, affecting the other animal functions, *indirectly*, through the perverted action of those centres. Neither will the *appearances* of inflammation, frequently found in various organs after death, prove fatal to the views here advanced. These appearances are, doubtless, deceptive, and are produced, not by *inflammation*, but by simple capillary *congestion*. The brain, pharynx, stomach, and air-passages, are the usual seats of these appearances; yet where, during life, are the symptoms that would indicate acute inflammatory action in these organs? The absence of delirium, hoarseness, cough, and dyspnœa, and of extreme gastric irritability, sufficiently refute the idea that these appearances are due to inflammation. It is more probable that the terrible muscular convulsions to which the patient is subject, by their disturbing effects upon the organs of respiration and circulation, favour the accumulation of blood in the capillaries, and thus give rise to these morbid appearances. But a more powerful argument in favour of the doctrine of absorption may be found in the fact—now generally conceded—that the virus is contained *in the saliva*, through which it is propagated from one animal to another. Now, as all the secretions are derived from the blood, how could this poison be found in the saliva unless first absorbed into the blood?

The positions assumed in my *third* proposition are, apparently, so well sustained by the symptoms of the first and second stages that to enter upon their discussion in this paper would seem to be unnecessary, involving, as it would, much useless repetition. But as differences of opinion may, and doubtless do, exist as to the immediate cause of death, a word or two in that connection may not be inappropriate.

It is contended by some writers that death is occasioned by an arrest of the respiratory processes, or *asphyxia*. That hydrophobia does, sometimes, terminate in this way in consequence of severe and prolonged *spasm of the glottis*, will not be denied. But that such is the *natural* or even *usual* manner in which the fatal result is produced, I am by no means prepared to acknowledge. That the natural tendency of great and prolonged irritation of the nervous centres is to occasion an *exhaustion of their excitability*, and consequent extinction of the functions of animal life over which they preside will, I apprehend, scarcely be controverted. That such prolonged irritation of the nervous centres does exist, in its highest form, in this affection, is abundantly manifested by all the phenomena which attend its progress. Besides, many cases are on record where all muscular commotion had ceased some time anterior to dissolution, and where death was evidently the result of a total exhaustion of the vital forces. I feel bound, therefore, to assume this to be the *natural* and usual mode in which death is produced, unless interrupted by the casualty adverted to.

That the *dread of fluids* is occasioned by the spasm of the muscles concerned in de-

glutition, which an attempt to swallow them excites, is not a new opinion. It has been held by many of the ablest writers on the disease. But why *fluids* should, preferably, or in a greater degree, excite spasms than solids, I am unable to explain; unless, indeed (in the state of exalted excitability of *all the senses* during the second stage of the disease), the *oscillatory motion* of fluids, or their more *sudden diffusion* throughout the buccal cavities should prove to be the cause. The solution of this problem, however, I leave to older and wiser heads than my own.

The increased flow of saliva appears to be a conservative effort of the vis medicatrix to eliminate the poison from the system, through the glands engaged in its secretion.

From the novelty of this proposition (which, so far as I am aware, is exclusively my own), it will naturally be expected that it shall be supported by an elaborate series of arguments tending to sustain its pretentions as a scientific truth. Candor compells me to acknowledge my inability to do this in a manner satisfactory even to myself; and were it not that it is the *keystone* upon which my indications of cure are based, I should hesitate long before committing it, thus unsupported, to the tender mercies of the professional critic.

Yet, however erroneous it may prove to be when tested in the crucible of scientific analysis, with the results of my single successful case in view, I shall continue to cherish it *as true* until its fallacies are demonstrated. I am aware that high authorities have denied the existence of *increased* salivary secretion in hydrophobia, because no evidences of *disease in the glands* can be detected. They infer that the frothy fluid which flows from the mouth, or adheres to the lips of patients and animals, is derived from the air-passages; and refer, in support of this view, to the fact that large quantities of a similar fluid are frequently found in the bronchial tubes and air-cells of the lungs after death.

To argue that because a secreting organ may not have manifested signs of *disease*, therefore its secreting power could not have been increased, is illogical and contrary to well-known facts in medical science.

As to the assumption, that the frothy fluid which flows from the mouth is formed in, and proceeds from, the air-passages, it will, I apprehend, require more evidence than has yet been adduced in its support, to entitle it to much consideration. In all the cases of hydrophobia I have seen upon record, I have yet to observe among the symptoms enumerated, any reference to the *physical signs* indicating accumulations of fluid in the air-passages of the lungs. Surely had such accumulations existed before death, the physical signs denoting them would have been sufficiently prominent to have claimed for them special attention. But, again, if the frothy fluid be formed in the bronchial tubes, it must, before reaching the mouth, pass through the trachea and larynx. Could it do so without exciting violent paroxysms of spasmodic cough and dyspnœa?

Reasoning, then, from these general deductions, I assume that there is increased salivary secretion, that this secretion *contains the virus by which the disease is produced*, and which is separated from the blood by the secretory action of the glands. Hence, I infer that the increased action of the glands is a conservative effort of nature to rid the system of the poison. Now, if these assumptions be correct, what are the plain and palpable indications they suggest for the management of the disease? Clearly, *first*, to reduce, if possible, the extreme excitability of the nervous system, the continuance of which occasions rapid exhaustion of the vital powers and death; and, *secondly*, to follow the path *pointed out by nature*, and endeavour to aid her in her efforts to expel the poison from the system through the channel she has indicated.

But where are the remedies capable of fulfilling these indications? If we are to rely on the recorded experience of the past, we shall find this a most difficult question to answer. Bloodletting, mercury, the whole class of narcotics and antispasmodics, have in turn been tried, and thrown aside as useless. Indeed, the entire Materia Medica has been laid under contribution, and almost every article possessing any activity has been resorted to, with the same unvarying results.

Where, then, are we to look for an agent capable of controlling this formidable disease? MERCURY I believe to be *the* remedy for hydrophobia. But to be efficient, it must be carried to the full extent of its *constitutional powers*, by which we shall be enabled to fulfil the *second* indication I have laid down for the treatment of the disease. But the query, "How are we to accomplish the *first* indication?" naturally presents itself; and I answer, "With the same remedy—mercury!" In the autumn of 1849, I witnessed the surprisingly prompt effects of calomel, in doses of sixty and eighty grains, in arresting the spasmodic action of the muscles, and checking the vomiting and purging attending two cases of cholera which occurred in my practice—this, too, after a fair trial had been given to calomel and opium, administered every half hour, in the usual doses, and when the patients were livid and nearly pulseless. From the results in these cases, I was led to suppose that calomel, *in large doses*, might prove as efficient in restoring the equilibrium of the nervous system when disturbed, as it is in equalizing the circulation in some other form of disease. From the notes of Maria's case, it will be perceived that the convulsive paroxysms were suspended for a period of *eight hours* after the first dose of calomel; and after the third dose nearly *twenty-four hours* elapsed, during which she was entirely exempt from them. It was not, however, until the full constitutional effects of the medicine were obtained that they entirely disappeared.

Since I commenced this paper, my attention has been attracted to a case of hydrophobia, reported in 1811, by a Mr. Tymon, a surgeon in the East Indies, who claims to have cured the patient by *large abstractions of blood*. He says, "I began by bleeding him until scarcely a pulsation could be felt in either arm." But he adds, "Opium was afterwards given, and the patient *salivated with mercury*." In my case, it will be observed, bloodletting was also practised, though not to the same extent as in the case treated by Mr. Tymon. I resorted to it, however, with no expectation that, of itself, it would exercise the slightest controlling influence over the disease; but simply for the purpose of obviating any tendency there might be to cerebral congestion, and for the further purpose of *promoting the more rapid absorption of the mercury*, by lessening the mass of the circulating fluids; and these, I apprehend, were the only beneficial effects produced by the large abstraction of blood in Mr. Tymon's case.

Insusceptibility to the action of medicines is a marked feature in this disease. Almost incredible quantities of opium and other narcotics have been given, without producing even the slightest degree of narcotism. This fact should be borne in mind in our efforts to bring patients under the constitutional effects of mercury; together with the additional fact that, from the rapidly fatal character of the disease, but little time is given in which to effect this object. By giving calomel in the doses here recommended (if my theory of its action on the nervous system be correct), we not only retard the fatal exhaustion resulting from the extreme excitability of the nervous centres, and thus gain time, but we rapidly saturate the system with the medicine and obtain its *specific effects* in a much shorter period than by the ordinary mode of administering it.—*American Journal of the Medical Sciences. Jan.* 1860.

MIDWIFERY.

SICKNESS OF PREGNANCY.

Dr. C. E. Bagot calls attention (*Dublin Med. Press*, Oct. 12, 1859) to the employment of calomel pushed to slight salivation as a most successful mode of relieving this sometimes intractable and dangerous affection: a practice which he recommended in 1846. In that year he had under his care a woman labouring under that extreme form of sickness from pregnancy which placed life in the most imminent jeopardy. I had tried al

the usual remedies suggested in such cases, and found them one after another to fail in producing any relief. Although there were no symptoms whatsoever which would make me suppose that any inflammation was either the proximate or remote cause of the sickness, I resolved to try the effects of mercury, and having had some experience of the powers of calomel in allaying other forms of vomiting, I fixed on the administration of this preparation steadily persevering in its use until her gums showed appearances of salivation, which they did in a very short time. This treatment resulted in the best effects. Immediately that slight food remained on the stomach, the patient rapidly recovered, and was in due time safely delivered of a full-grown infant.

The sickness of this patient, Dr. B. says, was of the very worst form, her symptoms were so urgent that he despaired of her existence being prolonged; her prostration of strength was excessive; her emaciation extreme; her pulse a small thread; she had no tenderness in the epigastrium; neither had she pain in the region of the womb, nor the least uneasiness on pressure over that organ; she had no febrile or inflammatory symptoms, and yet the most complete relief followed the exhibition of the mercurial pushed to slight salivation.

In two subsequent pregnancies this patient suffered equally from the same urgent symptoms, and on both occasions she was relieved by the same medicine.

INVERTED UTERUS REPLACED AFTER A LAPSE OF NEARLY TWELVE MONTHS.

Dr. Charles West reports (*Med. Times and Gaz.*, Oct. 29, 1859), the following case of this:—

A. A., aged 25, applied at the out-patients' room of St. Bartholomew's Hospital, August, 27, 1854, when she gave the following history of herself:—

She had been married five years, and had given birth to two children, of whom the former was born after a natural labour two years and a half since; the second on October 16, 1858. The child in this instance also was born alive after an easy labour, but the placenta was retained for three and a half hours, during which time very great hemorrhage took place, and in consequence of it the patient became insensible, and was, therefore, unable to say whether it was eventually removed by hand, or expelled by the natural efforts. She was left by her labour in a state of such extreme weakness that she was quite unable to suckle her child; and suffered in addition from much pain in the abdomen and diarrhœa. These ailments confined her to bed; and at the end of five weeks Phlegmasia Dolens of the right leg came on, for which leeches were applied, and other treatment was adopted, until, at the expiration of seven weeks, she sought admission into the London Hospital, where she remained for a month, and left the hospital much benefited as far as that ailment was concerned.

Soon after leaving the hospital, and about three months after confinement, the menses first reappeared. From the first they were profuse, and intermingled with coagula; they lasted longer than natural, and returned more frequently, and for some time she had completely lost count as to when her periods were due, so frequent, was their return, so almost constant their presence, while an abundant yellowish leucorrhœa appeared immediately on the cessation of the sanguineous discharge. The return of the hemorrhage compelled her on each occasion to keep her bed; but in spite of this precaution she had been reduced by it to a state of the most extreme exhaustion; her skin was sallow, her pulse very feeble, and very frequent, and she had the aspect of a patient suffering from advanced malignant disease.

On making a vaginal examination, a tumour of an oval form was discovered hanging down for about two inches and a half through the os uteri, which closely surrounded, but did not constrict it. Suspicion was raised as to its nature by finding that the pedicle of the tumour was of the same thickness as its extremity, and also by the fingers

when passed up behind it encountering a *cul-de-sac*, as if the uterus, with the exception of its orifice, were inverted. Hemorrhage was not excited by the examination, but a rather abundant blood-stained purulent leucorrhœa. The patient was at once admitted into the hospital, and on the 29th the diagnosis was established by the following means:—

1st. The uterine sound carried round the pedicle of the tumour encountered resistance to its further passage all round at the distance of half an inch. The finger, though introduced easily behind the tumour, could not be passed in front of it, as the anterior lip was too closely in contact with it.

2d. The fingers introduced into the rectum could without much difficulty be carried above the fundus of the tumour, showing that the body felt pervaginam was not an out-growth from the uterus, but the uterus itself in an altered position.

3d. If while one hand was in the vagina the other was pressed firmly over the symphysis pubis; at first, no body was felt between the two hands. Pressure made against the tumor in the vagina, however, brought it before long within the grasp of the other hand, when it was possible, through the thin abdominal walls, not only to distinguish its contour, but even to perceive the circular depression in its upper part which indicated the point of inversion of the womb.

Dr. Tyler Smith's case suggested an imitation of his proceedings, and, accordingly, after efforts made with the hand by grasping and compressing the womb to restore its position, or at least to render it more yielding, an air-pessary was introduced into the vagina and inflated to as great an extent as the patient could bear. On the following morning the os uteri was found much more dilated, and its tissue much more yielding, so that the fingers could now be passed all round the tumour with ease, and everywhere discovered the inversion of the substance of the womb. Manipulation of the inverted uterus was repeated daily until the 5th of September, and the pessary, was on each occasion reintroduced and reinflated, with the exception of one day, on which it was discontinued, in order to obtain relief for the bowels.

It did not seem, however, that much was gained by the proceedings beyond that increased dilatation of the os which was obtained by the first introduction of the pessary. The vaginal walls, indeed, were rendered more yielding by the extension to which they had been subjected by the pessary, so that the whole uterus admitted of being pushed up in the pelvis more readily than before, but no change was effected in the relation of the inverted body itself. A very offensive leucorrhœa had been excited by the pessary, and its distension had occasioned a very painful stretching of the vagina; but in spite of this the patient's health was already much better than at the time of her admission; she had already gained strength, and her complexion had lost something of its sickly hue.

I now attempted to modify the instrument, and had a pessary constructed so as to expand at its upper third more than elsewhere, in order to avoid needless stretching of the vagina; while it was fitted, by means of a wire stem, to a girdle which encircled the body in order to obtain a fixed point from which the pressure should act; a condition altogether absent in the air-pessary as at first employed.

This was first tried on September 20, the patient having remained since the 5th without any attempts at the replacement of the organ. Some advantage seemed to be gained by the pessary thus modified. It retained its position well, and seemed to produce less discomfort, and to cause a less profuse and less offensive discharge. Still it did not appear to exert any influence on the uterus itself, its force being rather expended in stretching the vagina.

After a few days' trial, I accordingly removed it, and had another constructed of smaller dimensions, under the impression that if it were introduced within the os uteri and there inflated it was more likely to expand the uterine walls, and thus to replace the organ than by any mere pressure exerted from below upwards against the fundus of the womb. On October 3, this new apparatus was introduced for the first time, and though no effect was produced in the first twenty-four hours, it was reintroduced on the

4th, and allowed to remain for forty-eight hours in its position. On the 5th, the patient complained of a good deal of pain in the abdomen, though not of more than she had experienced on some former occasions; and it was with a feeling of glad surprise that, on the 6th, it was discovered that the organ had resumed its natural position.

The os uteri was widely open so as readily to admit two fingers, and its lips were much swollen, the uterine sound passed nearly three and a half inches, and the womb was now felt in its natural position by the hand placed over the pubes. The patient was kept quiet in bed, and, for the next twenty-four hours, the urine was drawn off by the catheter. On the 7th, the sound ascertained that the womb still retained its proper position. Menstruation came on the evening of that day, and continued scantily until the 11th; and on the 13th, the sound discovered the uterus to have somewhat contracted, and now to measure scarcely three inches; and on the 18th, the patient left the hospital apparently in perfect health, and having walked about for some days without inconvenience.

Dr. West makes the following remarks on the best mode of employing the air-pessary, which may be of use to those who hereafter meet with a similar case:—

"1st. Neither in this case nor in another which came under my care, some ten years ago, did any benefit appear to result from manipulation of the womb, or from any attempts with the hand to replace the organ, or to reduce its bulk. The utility of such endeavours will, I apprehend, be limited to instances of recent inversion, or to those exceptional cases in which the womb remains comparatively yielding and flaccid some weeks after the occurrence of the accident, as it appears to have done in those reported by Dr. Belcombe, and Dr. Miller.

"2d. Many inconveniences attend the employment of the common air-pessary, partly from the want of some fixed support to retain it in its place, and partly from the circumstance that the pressure it exerts being equal in all directions, a most painful distension of the vagina is inseparable from any attempt to exert efficient counter-pressure against the inverted womb.

"3d. This disadvantage may be easily overcome by means of a belt to fasten round the waist, the anterior half of which, made of steel, serves as a fixed point for a metallic wire, which is attached to a small wooden disk or cup that bears the pessary. The pessary itself, made of vulcanized India-rubber, and in this instance four inches long by five in circumference at its middle, was rendered comparatively inelastic at its lower half by the introduction of several layers of linen between the folds of the India-rubber, while no such material intervened to prevent the full expansion of its upper half when it was filled with air by means of the syringe through the elastic tube that was connected with it. By this means continued pressure was exercised against the fundus of the inverted uterus, without painful distension of the vagina.

"4th. I am uncertain as to the exact mode in which the replacement of the uterus is effected, and doubt whether it is due to the direct pressure of the pessary against the fundus of the uterus, so much as to the unfolding of the uterine wall by the instrument when introduced into the shallow *cul-de-sac* within the os uteri, formed by the still uninverted portion of the cervix. If this supposition be correct, one's endeavour in any future case would be, first, to introduce a small pessary within the os, in order to dilate the aperture, and to follow this up by the employment of one somewhat larger, with the view of thus unfolding the wall of the organ, rather than to force the fundus upwards by direct pressure against it."

THE RISK TO LIFE OF FIRST AND SUBSEQUENT PREGNANCIES.

Dr. R. Barnes at the December meeting of the Obsteterical Society of London wished to draw the attention of the Society to the determination of the question as to whether first pregnancies were to be considered as more hazardous to life

than subsequent ones. The question was one of great interest as bearing upon life assurance. It was not sufficient to know the amount of risk for all pregnancies, which we were at present, indeed, in possession of. Excluding deaths from puerperal fever, the Dublin Hospital statistics showed that 1 in 100 of primiparæ died, and 1 in 200 of the multiparæ. But as the statistics of private practice only were capable of affording satisfactory information, he would suggest that the Fellows of the Society be invited to contribute to the settlement of the question. A tabular form for the purpose he submitted to the Society.

Dr. Tyler Smith agreed with Dr. Barnes as to the risk incurred by women in first labours, but it was the custom of the insurance office with which he was connected—the New Equitable—to assure the lives of healthy women pregnant for the first or any other time at the ordinary rates. The rates of life assurance were framed upon the average duration of life in average lives. At all ages, the expectancy of the continuation of life was somewhat greater in the female than the male; so that they were the best lives for assurance. As regarded the question of married or single women, there could be no doubt that there were certain risks incidental to child-birth, but single and childless women were subject in an increased degree to certain disorders of the nervous system, and to uterine and ovarian tumours, which rendered them, if anything, less eligible than child-bearing women for life assurance.

Dr. Murphy believed the principle of the New Equitable Society to be the correct one. The statistics of the Dublin Hospital were not applicable to the settlement of this interesting question for special stated reasons; and, in fact, arguments based on statistics generally required to be received with very great caution.—*Medical Times.*

NORMAL HYPERTROPHY OF THE HEART DURING PREGNANCY.

Mr. Larcher has had ample means for investigating this subject at the Paris Maternité for he has examined 130 pregnant women, the greater number of whom succumbed to puerperal fever—no lesion having preceded or given rise to the condition of the heart observed in them. The conclusion he comes to is, that the *heart is normally in a state of hypertrophy during gestation.* The walls of the left ventricle become increased by at least from a fourth to a third in thickness, its texture being also more firm and its colour more bright—the right ventricle and the auricles retaining their normal thickness. These observations, made by M. Larcher, date back some thirty years, and have been confirmed by subsequent ones, made with great exactitude by M. Ducrest, upon 100 other women: but why this paper has been so long in being published no explanation is given.

Within certain limits this condition of things may co-exist with the maintenance of health; but it none the less may be taken to express a predisposition to congestions and hemorrhages. If as a general rule, the hypertrophy gradually disappears after parturition, it may be otherwise in exceptional instances, especially where the recurrence of pregnancy has been frequent, and with short intervals. Is this not a cause of the varied lesions of the circulatory apparatus so commonly met with in women who have borne many children, either at too premature an epoch, at too brief intervals, or during an unfavourable condition of health? There is every reason, too, to believe that the bronchitis, which is so common during pregnancy, derives much of its character of persistency from this condition of the heart. Again, may we not attribute to this the greater danger of pneumonia when developed in pregnant women, and the frequency with which abortion then occurs? The various forms of hemorrhage met with in pregnancy, as epistaxis, hæmoptysis, metrorrhagia, and apoplexy, are likewise predisposed to by this hypertophy, normal though it be. Although pregnancy may, in the majority of cases, suspend or render slower the progress of pulmonary consumption, the progress of this affection becomes accelerated after delivery, and the still hypertrophied heart increases the pertuebration of the respiratory apparatus.—*Archives Générales*, tome xiii.

THE

British American Journal.

MONTREAL, MARCH, 1860.

CASE OF POISONING BY COAL GAS, IN TORONTO.

A very important and interesting case of the poisoning of a whole family, consisting of four adult persons, by common coal gas, occurred during the night of the 12th February, in Toronto. The family comprised Captain G. Henderson, Miss McLean, Miss Mary Kerr, the subject of a subsequent inquest, and a servant named Mrs. Armstrong. Miss Kerr was a visitor at the house, in attendance upon her friend Miss McLean, who was unwell. With the exception of Miss McLean who was sick, the others retired on Sunday evening the 12th, to bed in perfect health. On the morning of the 13th, a grand daughter wishing to enter the house was unable to do so, and went to Mr. Kerr's informing him of the fact. He instantly repaired to the house, and finding the doors all locked, and unable to effect an entrance by them, he finally succeeded in forcing open the cellar door, after which he made his way to the upper story of the house. He found the inmates all in their beds, and insensible, the house smelling strongly of the coal gas. He immediately threw open the doors and windows, with the object of effecting as complete a ventilation as possible, and sent at the same time for medical assistance, which was immediately rendered by Drs. Small, Thorburn, Wright and Agnew, with whom was afterwards associated Dr. Rolph. In the course of the afternoon of the same day, the 13th, all had recovered from the effects of the poison, with the exception of Miss Kerr, who lingered until the following Friday morning, when death put a period to her sufferings, the phenomena of which were evidently the effects of cerebral congestion. The report of the inquest says, "Drs. Small, Thorburn, F. Wright and Agnew, all handed in written statements. As their evidence did not differ, it is unnecessary to give the whole. The following will suffice."

"Dr. Thorburn first saw Mary Kerr, the deceased, on Monday afternoon, about six hours after the discovery of the accident. At that time she was in a state of complete insensibility, and incapable of being roused by any means whatever. The usual remedies for patients in her condition were resorted to. The respiration was loud, hurried, and irregular; the circulation was quick, short, and intermittent. The body was rigid. The countenance rather flushed, and considerable heat of head. The pupils largely dilated, and insensible to light. Frothy mucus escaped from the mouth. The powers of deglutition were imperfect. On the morning of Tuesday the muscular system lost its rigidity. The above condition remained until Wednesday noon, when the vital powers became still lower. The lower extremities became cold, and sloughing occurred upon

the nates. The enumerated symptoms continued until her death, this morning at 9½ A.M. Dr. Thorburn was of opinion that Mary Kerr came to her death from the effect of coal gas which she had inhaled.

When the jurymen had examined the body, it was at a very high temperature for a corpse, and some doubts were expressed as to whether or not the unfortunate girl was really dead. In reply to a question put by a juryman, Dr. Thorburn stated that narcotic poisons for a certain time after death preserved a temperature nearly as high as that which would exist during life, in the bodies of those affected by them. This accounted for the heat noticed in the deceased. He had not the slightest doubt that Miss Kerr was dead. The other medical gentlemen present concurred in this view.

Dr. F. Wright, the first medical gentleman who had attended the deceased, said :— When I arrived I found the family suffering from the effects of coal gas poisoning. I at once administered stimulants. I had the windows opened, stove-pipe holes opened, fireboards taken down, and fires put in every fireplace to promote ventilation. Drs. Agnew and Small soon arrived, and the stimulating treatment was continued. The servant, Miss McLean, and Mr. Henderson, were by this time resuscitated, and by Dr. Small's advice, all were removed to Mr. Helliwell's. From the first, I did not anticipate the recovery of the deceased, in consequence of the great prostration evidenced. Her countenance was flushed, her lips livid, breathing hurried and stertorous; eyes prominent and pupils fully dilated; pulse very weak and rapid. I tried to give her stimulants but could not; the powers of deglutition being very imperfect. I discontinued my efforts. I left the patients in the care of Drs. Small and Agnew. I returned soon afterwards, and found Drs. Agnew, Small, Rolph and others present, using every means for her recovery. My opinion is that the deceased came to her death by the inhalation of coal gas.

Dr. Small being recalled, stated that he accounted for the deceased having been affected to a greater extent than the others, from the fact that she had been lowest of all—on a mattress upon the floor, and had thus inhaled the heaviest and most poisonous gas. Carbonic oxyde is the active portion or poisonous part of gas and the heavier. This opinion was also endorsed by the medical witnesses and the Coroner.

The house, it appears, was not supplied with gas for the purposes of illumination, and evidence went to shew that it must have penetrated into the house, through the sewer, from a pipe or main in the street, from which, by some cause, it escaped.

Presuming that Dr. Small is correctly reported in what he said at the inquest, we cannot help remarking that we differ widely from him in his views, of the poisonous constituents of the coal gas, and the immediate cause of the poisoning in the present instance. Coal gas is admitted on all hands to be exceedingly comp'ex in its composition, which doubtlessly varies with the coal from which it is manufactured. Besides several hydro-carburets of various elementary composition, it commonly contains carbonic oxyde, carbonic acid, hydrogen, nitrogen, sulphurous acid gas, sulphuretted hydrogen gas, and not unfrequently ammonia, in some one form or other of its compounds. We have ourselves repeatedly, detected in the gas supplied to this city, sulphuretted hydrogen, sulphurous acid gas, and carbonic acid in large proportions, far greater, in fact, than should be; while the odour, which is so characteristic of it, is due to naphtha or some of its compounds. The object of the purifying processes through which it is put, (usually effected, and imperfectly by lime,) is to deprive the coal gas of its carbonic acid, sulphuretted hydrogen, sulphurous acid, and ammoniacal compounds. But as we have observed, this is generally very imper-

fectly performed, as the silver in any jeweller's shop will testify, and we therefore have as the most common impregnations, sulphuretted hydrogen, carbonic acid, and sulphurous acid, any of which are as deleterious, if not more so, than the carburetted hydrogen, or carbonic oxyde gases.

It is not a little singular that all the medical witnesses and the coroner, should have agreed in the statement, that the "carbonic oxyde gas was the active portion or poisonous part of the gas, and the heavier." On examination they will find, unless we are grievously mi-taken, that it is the *lightest* of all the constituents of the coal gas, the ammoniacal compounds alone, probably excepted. But the coal gas is a mixed gas, and therefore, the poisonous effects are due, not to any one gaseous ingredient of its composition, but to the combined effects of all, every one of them being to a greater or less extent deleterious when inhaled.

There are numerous examples on record of poisoning by coal gas, not a few of them fatal. To what extent coal gas may become mixed with atmospheric air, and that mixed air prove respirable for any length of time, without inducing bad effects, may never be known with precision. There is some reason for believing that a mixture of 8 or 9 per cent. of coal gas, will prove deleterious if not fatal, if inhaled for a length of time. If mixed with eleven parts of air, it becomes explosive on the approach of flame, and these facts tend to shew that the employment of coal gas, as a means of illumination, requires great caution on the part of those who use it. We would esteem it a favour if some of the medical gentlemen who were engaged in the professional attendance on Miss Kerr, would furnish this Journal, with a detail of the symptoms as they were developed in the several members of this unfortunate family.

HOMŒOPATHY.

It is really pitiable to witness the shifts, which sometimes otherwise excellent men resort to, to secure their object. For that purpose no scheme, however dishonourable, is deemed so; and even prevarication, the evidence of a distorted mind, is esteemed right and proper, provided the end be attained, much upon the principle, false as its own meaning however, that the end sanctions the means. We have been led into reflections of this kind, by certain proceedings among the globulists, lately in St. Louis, who sought to obtain a portion of the City Hospital, in which to treat patients, on what they are pleased to term their own principles, and among the arguments employed in their petition to the City Council, they observed that "Homœpathy was sanctioned by the crowned heads and nobility of Europe, and that European governments recognised it, by permitting its teaching and practice in their Hospitals." It appears, however, that a gentleman addressed a note to the American ministers resident at Vienna and Berlin, and to the Minister of Public Instruction in France, asking a reply to the following questions:

1st. "Is the teaching of Homœpathy authorized or permitted in any of the Colleges or Institutes of your Government?"

2nd. "Is the practice of Homœpathypermitted in any of the public Hospitals of your Government?"

3rd. "Is the private practice of Homœpathy sanctioned in your Government?"

The following is an abridgement of the replies, which are given at length, in the St. Louis Medical and Surgical Journal, and which was taken from the Medical and Surgical Reporter.

Count Buol—Minister of Foreign Affairs in Austria, answers: "1st That in Austria, Homœopathy is taught not by publicly appointed professors, but only by private teachers. 2nd. That this mode of cure is practised, not in public hospitals, but only in cloister, criminal and private hospitals. 3rd. That the private practice of Homœopathy is permitted to any physician who has a Diploma."

Ramner, the Prussian Minister, replies, "I have the honour to inform your Excellency, that Homœopathy in Prussia, is not admitted into the Universities nor Hospitals, nor other public Institutions. Physicians are allowed, if they please, to exercise Homœopathy in private practice."

Rouland—Minister of Public Instruction in France, writes, "the exercise of Homœopathy is not legally authorized in France. My administration has not authorized me to exercise any measure having reference to the teaching of Homœopathy."

After this, what are we to think of the parties who, in endeavouring to secure their object, have no scruples, whatever, in sacrificing truth on the altar of their *avarice* or *ambition*. And what are we to think of the system which numbers among its votaries such men.

QUACK MEDICINES.

Our attention has been called to a circular, whereby we glean that an "Emeute" is on the tapis amongst the Medical Staff of one of the Hospitals in the city of Ottawa, arising out of a difference of opinion as to the propriety of its "Medical Attendants" engaging in the advertizing and sale of quack Medicines; we hope that some of our confrères in that locality will put us in possession of the facts of the case. The question seems to be of more than local importance, as it affects the interests and dignity of the profession at large. In the absence of more definite information, for the present we forbear from further comment.

LICENTIATES OF THE COLLEGE OF PHYSICIANS AND SURGEONS OF LOWER CANADA.

It is sometimes a matter of consequence to know who are, and who are not Licentiates of the Province, and therefore qualified to practice in either section of it. With this object in view we publish the following list of the names of those gentlemen who have become Licentiates of the College of Physicians and Surgeons of Lower Canada, since the act incorporating it became law. We propose to publish in some early future number the names of those gentlemen who

have been licensed to practice by the Medical Board of Upper Canada during the same period, and we will, from time to time afterwards, as their names are gazetted, continue the lists.

LICENTIATES OF THE COLLEGE OF PHYSICIANS AND SURGEONS OF LOWER CANADA, SINCE MAY 1852.

Alfred Decoagne,	May	1852
Richard Weir, M.D.,	"	1852
Adolphe Bruneau,	"	1852
Henry Joseph Girouard,	"	1852
John Reddy, M.D.,	"	1852
John Teasdale, M.D.,	"	1852
Amable Simard, M.D.	"	1852
B. G. G. Demorest, M.D.,	"	1852
Eric B. Sparham, M.D.,	"	1852
Edward H. Bucke, M.D.,	"	1852
Allen Ruttan, M,D.,	"	1852
Robert Thompson, M.D.,	"	1852
George Henry Boulter, M.D.,	"	1852
Joseph Garvey, M.D.,	"	1852
Angus C. McDonnell, M. D.,	"	1852
Joseph Alfred Desjardins,	"	1852
C. M. D. Cameron,	"	1852
H. Thomas Ridley, M.D.,	"	1852
Victor Perrault, M.D.,	"	1852
Joseph Moore, M.D.,	"	1852
John Easton, M.D.,	"	1852
Newton W. Powell, M.D.,	"	1852
James McFarlane, M.D.,	"	1852
Charles F. F. Trestler,	"	1852
William Boswell, M.D.,	"	1852
George C. Aylwin,	Oct.	1852
John McMahon,	"	1852
Benjamin Workman, M.D.,	May	1853
Thomas Blatherwick, M.D.,	"	1853
Louis B. Durocher,	"	1853
John Alexander Grant, M.D.,	"	1853
Colin McDonald, M.D.,	"	1853
Arthur Delisle, M.D.,	"	1853
Anselme H. Paquet,	"	1853
J. O. Laurandeau,	"	1853
Charles J. F. Robinson,	"	1853
John Cameron McFurland, M.D.,	"	1853
John Jones Ross,	"	1853
Stephen Duckett, M.D.,	"	1853
Michel H. E. Gaudette,	"	1853
Romauld Tassé,	"	1853
William Macbean,	"	1853
Joseph C. Poitvin,	Oct.	1853
Joseph E. Ferté,	"	1853
Alexis Charbonneau,	"	1853
Patrick E. McKeon,	"	1853
Victor Peltier,	"	1853
Adolphe Fournier,	"	1853
Alfred Bissonnet,	"	1853
Augustus M. Corbett, M.D.,	May	1854
Joseph P. Phelan, M.D.,	"	1854
David M. Rintoul, M.D.,	"	1854
Peter Rolph Shaver, M.D.,	"	1854
James Barnston, M.D.,	"	1854
Thomas Simpson, M.D.,	"	1854
William H. Corbett, M.D.,	"	1854
Robert Craik, M.D.,	"	1854
Hermon Cook, M.D.,	"	1854
Michel S. Boulet,	"	1854
Ormond Skinner,	"	1854
Thomas Blake,	"	1854
Stephen A. Scott, M.D.,	"	1854
Alfred Sharpe, M.D.,	"	1854
Charles Buckly,	Oct.	1854
Jean B. O. Lanctot,	"	1854
James Franchere,	"	1854
A. Pierre Pepin,	"	1854
Nelson Loverin, M.D.,	May	1855
Eliphalet G. Edwards, M.D.,	"	1855
John L. Stevenson, M.D.,	"	1855
Coller M. Church, M.D.	"	1855
George Pringle, M.D.,	"	1855
John B. Gibson, M.D.,	"	1855
James M. Paterson, M.D.,	"	1855
Charles Ault, M.D.,	"	1855
James F. Ault, M.D.,	"	1855
Elzear Gauvreau, M.D.,	"	1855
Antoine L. Desaulniers,	"	1855
Ovide Peltier,	"	1855
Benjamin S. Wilson,	"	1855
Charles Belhumeur,	"	1855
Pierre St. Jean,	"	1855
Stanislaus Goyette,	"	1855
Napoleon Robillard,	"	1855
Hubert Larue,	Oct.	1855
Hyacinthe N. Cassavant,	"	1855
Gédéon Laroque,	"	1855
François X. Coté,	"	1855
William J. Jones, M. D.,	May	1856
Joseph Alex. Hamel, M.D.,	"	1866
Edward Laberge, M,D.,	"	1856
Joseph J. B. Dupuis. M.D.,	"	1856
Alexander H. Kollmyer, M.D.,	"	1856
Alexander Kirkpatrick, M.D.,	"	1856
James McG. Stevenson, M.D.,	"	1856
James C. Lee, M.D.,	"	1856
Alexander B. Stein,	"	1856
Timothy Sauriol,	"	1856
Charles L. Augé,	"	1856
Misail Palardy,	"	1856
Joseph H. L. St. Germain,	"	1856
Casimir Dufresne,	"	1856
John J. L. De Martigny,	"	1856
Simon J. A. Leblanc,	"	1856
Gédéon B. Lafleur,	"	1856
Louis D. Cyr,	"	1856
James E. Stansfield,	"	1856
Augustus L. Weilbrenner,	"	1856
Ambroise Tremblay,	"	1856
Walter Thorp,	Oct.	1856
Alexander D. Stevens, M. D.,	"	1856
Napoléon Lavoie,	"	1856
Isaac Demers,	"	1856
Samuel Rinfrêt,	"	1856
Ludger Forest,	"	1856
Ubalde Tétu,	"	1856

Luke A. Quintal,.....	"	1856	Louis Th. Robitaille, M. D.,.....	"	1858
Amédé Marien,.....	"	1856	Pierre Beaudouin,.....	"	1858
Moses Mayball,.....	"	1856	Francis Reynolds,.....	"	1858
Charles Mortimir, R. N.,.....	May	1857	Joseph Renaud,.....	"	1858
Alexis G. A. Ricard,.....	"	1857	David Marsil,.....	"	1858
Henry Shoebottom, M. D.,.....	"	1857	Onézime Peltier,.....	"	1858
Robert Howden, M. D.,.....	"	1857	George Fleury,.....	"	1858
David T. Robertson, M. D.,.....	"	1857	Adolphe Dagenais,.....	"	1858
Gordon J. Emery, M. D.,.....	"	1857	Edward Chevrefils,.....	"	1858
Patrick O'Leary,.....	"	1857	Léonor A. Fortier,.....	"	1858
William Wilson, M. D.,.....	"	1857	Wm. H. Foster,..	"	1858
John Aylen, M. D.,.....	"	1857	Eustache Lemire,.....	"	1858
Levi R. Church, M. D.,.....	"	1857	Norbert Drainville,.....	Oct.	1858
Etienne R. E. Riel, M. D.,.....	"	1857	Félix D. Fontaine,.....	"	1858
Richard Whiteford, M. D.,.....	"	1857	Eugène Nolin,.....	"	1858
Robert N. Shaver,.....	"	1857	Joseph Arthur Tétu,.....	"	1858
Alexis C. E. Picault, M. D.,.....	"	1857	Magloire Turcot,.....	"	1858
Andrew A. Boylan, M. D.,.....	"	1857	Alfred Sirois,.....	"	1858
Alexis Poisson,.....	"	1857	Charles L. P. Giroux, M. D.,.....	May	1859
Louis J. Bacon,.....	"	1857	William A. Duckett, M. D.,.....	"	1859
James S. Crookshanks, M. D.,...	Oct.	1857	Edmond G. Provost, M. D.,.....	"	1859
Hugues Philiatrault,.....	"	1857	William H. King, M. D.,.....	"	1859
Charles Morin,.....	"	1857	Linus O. Thayer, M. D.,.....	"	1859
Robert Anderson,.....	"	1857	François X. Barolette,.....	"	1859
Henry De la Martellere, M. D.,..	"	1857	Dieudonné Généreux,.....	"	1859
D. D. Archambault,.....	"	1857	Evariste O. C. Mongeon,.....	"	1859
Antoine A. Marsau,.....	"	1857	Isaac Forest,.....	"	1859
Pierre H. Bernies,.....	"	1857	Dunois Godette,.....	"	1859
Gustave De Lorimier,.....	"	1857	D. Pierre A. Bérard,.....	"	1859
Antoine G. Andrieszewig, M. D.,	May	1858	Antoine A. Duhamel,.....	"	1859
George Pattee, M. D.,.....	"	1858	Charles Faribault,.....	"	1859
Alexander P. Reid, M. D.,.....	"	1858	Alexis P. Paré,.....	"	1859
William Harkin, M. D.,.....	"	1858	Léon Foisy,.....	"	1859
James McGarry, M. D.,.....	"	1858	Roch Mignault,.....	"	1859
William H. Taylor, M. D.,.....	"	1858	Joseph Théberge,.....	Oct.	1859
Charles W. E. Glen, M. D.,.....	"	1858	Edward T. Roberts, M. D.,.....	"	1859

ANSWER TO DR. HINGSTON'S COMMUNICATION ON MEDICAL EVIDENCE.

We have been requested to state that in consequence of Dr. Nelson's unavoidable absence from town, in attendance on his duties, as an Inspector of Hospitals, Jails, and Asylums, the answer to Dr. Hingston's paper must be postponed to the next monthly issue of this Journal.

BOOKS RECEIVED.

Received from Blanchard & Lea, Philadelphia, through B. S. Dawson and Son, the following publications:—

THERAPEUTICS AND MATERIA MEDICA.—A systematic treatise on the action and uses of Medicinal Agents including their description and History, by Alfred Stille, M.D., late Professor of the Theory and Practice of Medicine in the Medical department of Pennsylvania College, &c., &c.; 2 vol.: Royal 8 vo. pp. 819 and 975. Philadelphia: Blanchard & Lea, 1860. Price $8 75.

A PRACTICAL TREATISE ON DISLOCATIONS AND FRACTURES, by Frank Hastings Hamilton, M.D., Professor of Surgery in the University of Buffalo, &c., &c. Illustrated with two hundred and eighty nine wood cuts, Royal 8vo., pp. 757. Philadelphia: Blanchard & Lea, 1860. Price $4 75.

CONTRIBUTIONS TO OPERATIVE SURGERY AND SURGICAL PATHOLOGY, by G. M. Carnochan Professor of Surgery in the New York Medical College, &c., &c., with illustrations drawn from Nature. Philadelphia, Lindsay & Blakiston, 1860. 4to. part 3. Price 85 cents.

RANKING'S ABSTRACT OF THE MEDICAL SCIENCES. Price $2 per annum.

ABSTRACT OF METEOROLOGICAL OBSERVATIONS AT *MONTREAL* IN FEBRUARY, 1860.

By Archibald Hall, M.D.

Day.	DAILY MEANS OF THE: Barometer corrected and reduced to F. 32°	Temperature of the Air.	Dew Point.	Relative Humidity.	Ozone.	CLOUDS: Amnt.	CLOUDS: General Description.	THERMOMETER. Maximum read at 9, P. M.	THERMOMETER. Minimum read at 7, A. M.	WIND. Its general Direction and Mean Force from 0 Calm to 10 Violent Hurricane.	RAIN AND SNOW. Rain in 24 hours read at 10, A.M.	RAIN AND SNOW. Snow in 24hours read at 10 A.M.	RAIN AND SNOW. Total rain and melted snow.	GENERAL OBSERVATIONS.
	Inc's	°	°	0. 100	0. 10	0. 10		°	°		0. 10	Inch.	Inch.	Inch.	
1	30.436	—12. 0	—19. 0	.61	2.5	3.0	Cu.	— 2.5	—21. 0	W	3.0	.....	.....	.....	
2	30.454	5. 1	— 0. 3	.79	3.5	8.1	Cir. Cu. St.	11. 2	—10. 0	S.	1. 0	.....	.....	.....	
3	30.491	9. 2	— 0. 8	.75	3.5	5.2	St. Cu. St.	18. 0	— 1. 0	N.	0. 6	.....	.....	.....	Fine Lunar Halo.
4	30.401	11. 0	3. 6	.78	5.2	5.2	Cu. St.	18. 1	2. 8	N.	1. 0	.....	Inap.	Inap.	Misty ev'g. Lunar Corona.
5	30. 255	20. 2	14. 6	.82	6. 0	6. 6	Cu. St.	30. 8	— 1. 4	S.	2. 6	.....	.....	.....	Slight Fog, A.M.
6	29. 590	37. 9	35. 6	.90	8. 0	10. 0	Nim.	43. 0	29. 4	S.S.W.	1. 6	.....	0. 60	0. 11	Eclipse invisible from clouds
7	29. 778	31. 4	23. 4	.78	4. 5	6. 3	Cu. St.	38. 2	21. 8	W.	2. 6	0. 02	.....	0. 02	
8	29. 920	29. 5	20. 4	.74	3. 5	4. 3	St. Cu. St.	37. 2	20. 2	S.W.	1. 0	.....	.....	.....	
9	29. 476	33. 7	27. 1	.79	5. 5	7. 0	Cu. St. Nim.	41. 0	21. 4	S.W.	1. 0	.....	.....	.....	
10	29 831	3. 0	— 5. 5	.72	2. 5	4. 6	Cu. St.	39. 2	— 1. 2	W.N.W.	3. 6	Inap.	0. 40	0. 04	Bright Zod. and Aur. lights.
11	30. 055	0. 0	— 8. 5	.68	5. 5	7. 3	Cu. St. Nim.	4. 0	— 9. 6	S.W.	1. 6	.....	.....	.....	
12	30. 056	9. 5	0. 6	.79	4. 0	7. 6	Cu. St.	14. 8	— 1. 4	W. S.W.	2. 0	.....	0. 50	0. 05	
13	29. 882	22. 3	15. 3	.85	7. 0	10. 0	Nim.	28. 9	11. 5	S.W.	1. 3	.....	Inap.	Inap.	
14	30. 136	14. 1	1. 8	.75	2. 5	1. 3	Cir. Cu.	25. 5	5. 9	W. S.W.	0. 6	.....	0. 60	0. 06	Bright Zodiacal light
15	30. 115	12. 7	— 7. 5	.73	6. 5	5. 0	Cir. St.	9. 0	— 4. 2	N.N.E.	2. 3	.....	.....	.....	
16	29. 679	21. 4	15. 0	.86	10. 0	8. 0	Nim.	30. 7	1. 3	S.S.W.	1. 6	.....	7. 80	0. 41	Aurora with streamers.
17	29. 881	6. 8	— 5. 1	.71	2. 0	3. 3	Cu. St.	13. 5	5. 0	W. S.W.	2. 0	.....	0. 60	0. 05	
18	29. 555	5. 0	— 2. 5	.74	6. 5	6. 6	Nim.	8. 5	— 9. 0	W. S.W.	2. 0	.....	.....	.....	Solar Halo, A.M.
19	29. 621	19. 6	10. 7	.84	10. 0	8 3	Nim.	22. 8	— 1. 2	N.W.	3. 0	.....	21. 50	1. 45	Snow storm.
20	29. 872	16. 9	9. 0	.81	10. 0	10. 0	Nim.	25. 0	4. 0	S.S.W.	2. 6	.....	1. 60	0. 16	
21	30. 083	35. 1	31. 2	.86	8. 0	3. 6	Strat.	43. 2	23. 6	S.W.	1. 3	Inap.	0. 50	0. 07	Aur. with stream. Zod. light.
22	29. 749	34. 5	31. 3	.92	10. 0	10. 0	Nim.	45. 0	18. 0	S.	1. 6	.....	.....	.....	Steady heavy rain.
23	29. 449	39. 6	33. 8	.78	10. 0	7. 0	Nim.	49. 3	35. 0	W. S.W.	3. 0	0. 98	.....	0. 98	
24	29. 836	19. 9	12. 0	.84	2. 5	4. 3	Cu. St.	36. 3	16. 0	W.	2. 3	0. 03	Inap.	0. 03	Zodiacal light.
25	29. 979	16. 5	6. 2	.80	1. 2	6. 6	Cu. St.	22. 8	11. 0	S.W.	1. 6	.....	.....	.....	
26	30. 294	16. 1	5. 0	.77	1. 0	4. 6	Cir. St.	21. 0	7. 8	W. S.W.	2. 6	.....	Inap.	Inap.	Solar Halo, P.M.
27	30. 093	33. 7	31. 4	.81	1. 5	5. 3	Strat.	45. 0	18. 3	S.S.W.	1. 6	.....	Inap.	Inap.	
28	30. 455	27. 1	20. 0	.83	1. 7	7. 6	Cu. St.	41. 4	20. 0	N.N.E.	2. 3	.....	.....	.....	
29	30. 230	32. 1	28. 0	.89	9. 0	10. 0	Nim.	38. 0	23. 2	N.	1. 0	0. 02	.....	0. 02	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
S's												1. 05	34. 10	3. 45	
M's	30. 012	18. 64	11. 65	.791	.....	.....	.....	27. 60	8. 00						

ABSTRACT OF METEOROLOGICAL OBSERVATIONS AT *TORONTO* IN FEBRUARY, 1860.

Compiled from the Records of the Magnetic Observatory.

Day.	DAILY MEANS OF THE: Barometer reduced to 32° Fah.	Temperature of the Air.	Relative Humidity.	Amount of Cloudiness.	THERMOMETER. Max'm read at 9, A.M. of next day.	THERMOMETER. Min'm read at 2, P.M. of same day.	Dew Point at 3, P.M.	WIND. General Direction.	WIND. Mean Velocity in Miles per hour.	RAIN AND SNOW in 24 hours, ending at 6 A.M. ext day. Rain.	Snow.	Total rain and melted Snow.	Ozone in 24 hours ending 6 A.M. of next day.	GENERAL REMARKS.
	Inches.	°	0—100	0—10	°	°	°			Inch.	Inch.	Inch.		
1	30. 042	1. 70	76	6	9. 0	—3. 5	—2. 0	N. 71 W.	3. 72	.....	.....	.....		Lunar Halo.
2	30. 073	10. 93	81	6	17. 2	5. 0	9. 0	N. 75 W.	2. 47	.....	Inap.	Inap.		
3	29. 960	14. 35	78	4	20. 0	7. 2	7. 0	S. 25 E.	3. 90	.....	0. 1	0. 010		Lunar Halo.
4	. 979	19. 42	80	7	25. 6	10. 4	17. 0	N. 34 W.	0. 85	.....	.....	.....		
5	.....	Sunday			38. 0	11. 5	.....	S. 13 E.	6. 45	. 135	0. 2	. 155		
6	. 319	35. 52	83	10	42. 8	31. 0	29. 0	S. 79 W.	5. 96	.....	.....	.....		
7	. 603	28. 28	71	4	31. 2	28. 8	22. 5	N. 81 W.	10. 43	.....	Inap.	Inap.		
8	. 579	29. 97	83	2	35. 3	22. 0	26. 0	S. 38 W.	6. 92	.....	.....	.....		
9	. 256	27. 87	70	7	41. 5	27. 5	26. 5	N. 79 W.	22. 98	Inap.	.....	Inap.		
10	. 912	7. 07	74	2	12. 8	3. 9	—1. 0	N. 29 W.	8. 44	.....	0. 2	. 020		
11	. 538	13. 97	91	10	19. 8	5. 0	17. 5	N. 1 E.	7. 19	.....	2. 0	. 200		
12	.....	Sunday			22. 5	1. 8	.....	S. 74 W.	5. 17	.....	.....	.....		
13	. 532	27. 33	90	10	32. 4	17. 0	29. 0	N. 10 W.	4. 08	.....	4. 0	. 400		Solar Halo.
14	. 812	14. 50	81	4	23. 2	18. 0	8. 0	N. 4 E.	11. 29	.....	.....	.....		Solar Halo.
15	. 422	23. 87	89	10	28. 0	4. 2	23. 0	S. 70 E.	13. 59	.....	3. 0	. 300		
16	. 512	9. 57	85	4	20. 0	11. 5	4. 0	N. 62 W.	13. 18	.....	.....	.....		Faint Auroral Light.
17	. 632	4. 88	78	3	19. 6	—5. 4	3. 0	N. 66 E.	7. 51	.....	.....	.....		
18	. 050	13. 40	88	10	20. 2	7. 2	8. 0	N. 13 E.	20. 73	.....	9. 0	. 900		Very Stormy day.
19	.....	Sunday			22. 7	6. 2	.....	N. 73 W.	11. 79	.....	.....	.....		
20	. 538	28. 28	82	7	34. 6	11. 5	23. 0	S. 55 W.	7. 17	.....	0. 3	. 030		
21	. 675	33. 72	78	3	39. 6	17. 5	27. 5	N. 80 E.	7. 00	. 305	.....	. 305		
22	. 158	43. 83	90	7	50. 2	35. 6	44. 0	S. 2 W.	8. 15	. 275	.....	. 275		First Thunderstorm of y'r, —6 P.M. to 8 P. M.
23	. 314	30. 88	76	10	39. 8	32. 2	22. 5	N. 78 W.	17. 43	Inap.	Inap.	Inap.		
24	. 598	20. 48	77	6	24. 5	22. 0	14. 0	N. 59 W.	10. 15	.....	Inap.	Inap.		
25	. 768	18. 42	68	6	23. 4	13. 6	12. 5	N. 68 W.	10. 57	.....	Inap.	Inap.		
26	.....	Sunday			35. 6	12. 2	.....	S. 31 W.	8. 75	.....	.....	.....		
27	. 814	40. 22	72	7	45. 4	29. 8	36. 5	N. 81 W.	4. 86	.....	.....	.....		Solar Halo.
28	. 934	34. 27	85	10	37. 0	33. 5	28. 0	N. 75 E.	8. 53	. 230	.....	. 230		
29	. 738	37. 90	96	10	41. 5	32. 0	38. 0	N. 52 E.	3. 99	. 385	.....	. 385		Fog.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
S's	.....	.....	.....	.....	.....	.....	.....	.....	.....	1. 330	18. 8	3. 210		
M's	29. 6323	22. 83	81	7	29. 43	14. 97	19. 10	N. 61 W.	8. 73					