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GUNSHOT WOUND OF THE HEART WITHOUT PERFORATION OF THE PERICARDIUM.

By A. F. HOLMES, M. D., Professor of Medicine, McGill College.
To the Editor of the British American Journal of Medical and Physical Science.

Though the publication of cases of unique character is of comparatively little importance, yet, as I am of opinion, no fact should remain unrecorded, of which there is a probability that it may hereafter become useful, I send you a statement of a very remarkable case that occurred to me in the month of December, last year, and which, should there ever be a new edition called for, of "Les Cas Rares," would richly deserve a place in that "receuil" of medical curiosities.

In the month of December, 1844, during the Municipal elections, a riot took place, in the course of which, an attempt was made by some of the parties engaged to force their way into a house occupied by their opponents. A young man of the name of Johnston, being the foremost of the assailants, was, while attempting to force his way up a staircase, fired at and mortally wounded. He lived but a very short time.

I was called to see him, and subsequently, at the request of the Coroner, and in conjunction with Dr. Hall and Dr. C. A. Campbell, I made an examination of the body.

Externally, several wounds were visible, (the musket having been probably loaded with buck-shot,) on the left side of the chest. Only one had penetrated its cavity. The shot had entered at the upper edge of the fourth rib just at its union with its cartilage, carrying off the edge of the bone. With the view of obtaining a better view, the left ribs were sawed low down, and then the sternum carefully raised. The appearances presented, were a bloody ecchymosed condition of the anterior part of the left lung as it laps over the pericardium; a bloody and infiltrated state of the cellular substance lying on the pericardium; and an ecchymosis of the extent of about $1\frac{1}{2}$ inch, filling the anterior edge of the right lung; where it lies in contact with the pericardium. The pericardium evidently contained a large quantity of fluid, the nature of which was denoted by the colour of the membrane.

Feeling convinced of the perforation of the pericardium, I carefully cleared it of the adhering ecchymosed

cellular substance, a proceeding which I afterwards regretted, as it prevented our tracing what must have been the track of the ball. We then examined the left lung, and found it had been struck near its anterior edge, and the pleura covering it torn, showing a circular aperture, as if the ball had penetrated the lung—no corresponding aperture for its exit could be found, and a probe could be passed but a very short way into the substance of the lung. Nearly a pint of bloody serum, but without clots, occupied the cavity of the pleura. The pericardium was then examined with the greatest care, every part showing the least appearance indicative of the passage of the ball, being closely investigated. The sac evidently containing a large quantity of blood, it never occurred to us that the heart could have been wounded unless after the perforation of its envelope. Finally, supposing that the ball might have entered so as to produce a kind of valvular opening, I surrounded the pericardium with my hands, and squeezed it with considerable force. No fluid issued, and then, despairing of discovering the supposed perforation, I slit open the membrane, and gave exit to a large quantity of bloody serum and clots of blood. There was seen on the anterior wall of the heart, penetrating the right ventricle, a transverse linear opening without laceration at the margins, which were smooth and rather turned inwards, and sufficiently large to admit the finger. Feeling sure of now finding the ball, the finger was introduced. The septum ventriculorum was found uninjured, but no ball could be perceived.

The engorged portion of the right lung was then examined, and it was found that immediately within its edge, on the mesial aspect, a hole existed in the pleura, which did not, however, penetrate into the substance of the lung.

Finally, the lungs and heart were removed from the body, and there was then found lying in the right cavity of the pleura, a piece of lead of an irregular figure, about the size of a buck-shot.

Though unable to point out the track of the ball, yet the injury of the left lung, the bloody state of the cellular substance over the pericardium, the ecchymosis and wound of the right lung, the direction of the wound in the heart, and the discovery of the ball in the right

cavity, can leave no doubt as to its course; but the wonder is, how the heart could have been perforated, while the pericardium was not. A question may be raised as to the possibility of the opening being caused by the spontaneous rupture of the heart, and not by the direct force of the ball; and in this view, the case may present a subject of interest to the medical jurist.

To support this opinion, but two circumstances can, I think, be adduced: 1st, That the person was making strong exertion: and, 2d, That the pericardium was whole. The force of the former of these facts, however, is entirely removed, when we find that the opening had taken place, under different circumstances from those in which spontaneous rupture occurs: 1st, The person was not known to have laboured under heart disease, and the manner of his death makes it almost certain that he was in good health at the time. 2d, The heart was natural in size and consistence, perhaps below the average bulk. 3d, The aperture was in the right ventricle and towards the base, while in the very large majority of cases recorded of spontaneous rupture, the opening has been in the left ventricle, and towards the apex. 4th, The margins of the wound were not softened or ragged, but smooth, linear, and slightly turned in. 5th, The wound was longer on the peripheral than on the ventricular aspect.

With regard to the second ground for supposing the injury of the heart to have been caused by spontaneous rupture, viz., the integrity of the pericardium, I may remark, that however unlikely it might be that the pericardium should be found uninjured while the heart within it had been perforated, yet the possibility of such an occurrence is demonstrable from the analogy furnished by gunshot wounds in other parts of the body. Military surgeons have frequently narrated examples where balls had penetrated to a considerable depth, carrying before them folds of the shirt, handkerchiefs, &c., without perforating them. Thus Guthrie states the case of an officer who was wounded in the thigh. "I saw," he says, "that the shirt had gone in with the ball, and on pulling at the shirt it came out from the depth of *four* inches, a perfect cul de sac, having the ball at the bottom of it." Hennen, Larrey, &c., relate similar examples. Now, if a shirt or a silk handkerchief can be thus acted on, there can be no reason why a tough, strong membrane like the pericardium should not be similarly affected. Indeed, such an occurrence is actually on record. In the article "Cas Rares," in the *Dict. des Sciences Med.*, we have the following narration, "Un soldat ayant reçu un coup de feu à la poitrine, fut relevé presque mort: une hémorrhagie abondante faisoit désespérer de sa vie. A force de soins, le sang commença à couler avec moins de force vers le troisième jour: insensiblement les forces du malade

revinrent, la suppuration succéda à l'hémorrhagie: il sortit plusieurs esquilles d'une coté que la balle avoit fracturée. Au bout de trois mois, la plaie se cicatrisa, et le malade, rétabli, n'éprouvait d'autre incommodité que de fréquentes palpitations de cœur qui le tourmentèrent pendant trois ans. Il mourut d'une maladie étrangère aux palpitations, six ans après la blessure. M. Maussion fit l'ouverture du cadavre: il trouva la balle enchatonnée dans le ventricule droit du cœur, près de sa pointe, *recouverte en grande partie par le pericarde et appuyée sur le septum medium.*"

Meckel in his manual of anatomy, refers also to the fact of the heart being wounded, without injury to its envelope. His words (translated by Doane) are, "Contusions of the chest, or the forcible penetration of foreign bodies, *as of musket boils*, also tear the heart, even when the parts surrounding this viscus are uninjured."

Entertaining no doubt, therefore, that the wound was caused by the direct contact of the ball, driving the pericardium before it, I think the manner of its formation may be more readily understood by supposing that at the instant of being struck, the heart was in the act of contraction, its fibres hard and rigid from their muscular action. In this state the ball suddenly impinging produced an effect similar to what happens to an over-braced harp-string when struck. The fibres snapped across. Allowing that the pericardium had been driven into the wound, it would probably soon have been forced out by the efforts of the heart to expel the blood; but this might probably have delayed the individual's death beyond the short time he lived after receiving the wound. It is, therefore, more probable that the ball, being nearly spent, did little more than graze the heart, being deflected by the tough pericardium, while the principal part of the solution of continuity was owing to the snapping across of the fibres in consequence of the shock. That the ball was nearly spent is evident from the little injury suffered by the right lung against which it struck with only force enough to perforate the pleura and induce engorgement, and then falling into the cavity of the chest.

Dec. 1, 1845.

INFANTICIDE BY OMISSION.

By C. SMALLWOOD, M.D., St. Martin.

I was requested by a magistrate residing in this parish on the morning of the 31st May, 1840, to visit Zoe L—, who was suspected of Infanticide. It was about 43 hours after delivery. She was 19 years of age, of spare habit, slender make, and short stature. I found her in bed, countenance pale—pulse natural—mammary full, and somewhat hard, evidently containing milk—a milky fluid oozing out when pressed.

Areola dark coloured—abdomen wrinkled and flabby,

the cuticle streaked, and of a dark colour, uterus nearly doubled its natural size, and tender to the touch, os uteri open and relaxed. Lochia copious, her linen much soiled with it; says she did not know she was pregnant; says she has not menstruated for nearly two years.

I was requested by the same magistrate, the following day, to examine, post-mortem (55 hours after supposed death), the body of a female child, which had been exhumed for the purpose of holding an inquest. It had been interred about 36 hours, in a wall-nut wood coffin. The body presented no external marks of violence, and but very slight marks of putrefaction. Measured 19 inches long, weighed 5lbs nearly. Umbilical cord cut about a hand's breadth from the belly and tied. Nails and hair well developed; cellular tissue filled with fat; gall bladder containing bile; meconium abundant in the large intestine; thymus gland large, and of a pale colour; lungs small, and of a dark violet hue, exposing the heart and pericardium, which appeared *proportionately* very large.

I removed the lungs and the heart from the thorax, and they sank in water to the bottom of the vessel. I then removed the heart and its appendages, and submitted the lungs alone to the same test, with the same result. I also obtained the same results from each lung separately. I then cut each lung into 15 or 20 pieces, and each of these pieces sunk to the bottom of the vessel; there was no distinct crepitation in any part of the lungs. The foramen ovale was perfectly open, and the ductus arteriosus was not contracted.

It appears from the evidence of Louis P—, which was corroborated by his wife, that on the 29th of May, 1840, they retired to bed about $\frac{1}{2}$ past 9 p.m. (the house consisted but of one room, in which the prisoner, their servant maid, and two small children, slept in separate beds); that about midnight he heard the prisoner get out of her bed, and sit upon a bucket, which was used by the family (in lieu of a pot de chambre); that there was water in it, when he retired to bed. The prisoner remained upon the bucket for about 10 minutes, and then returned again to bed. While on the bucket he heard her moan, and discharge a quantity of liquid, which he supposed was from the bowels; he asked her if she was sick, and she replied that her menses, which had been retarded for nearly 2 years, had that moment commenced, and that she felt relieved. He recollected her appearing a little unwell the evening before, on going to bed.

The prisoner got up out of bed as usual about half past four A.M., and left the house, and was absent about ten minutes, during this time the witness and his wife rose, and his wife directed his attention to the bucket, which contained a female infant, with the placenta attached and some clots of blood. While they were making this

examination the prisoner came in, and when they accused her of the crime she made no reply. They separated the child from the placenta, and it was buried in the afternoon of the same day. They swore positively they heard no child cry. The infant, as well as the coffin, was duly identified.

I examined the bucket. It was of common size $9\frac{3}{4}$ inc. deep, and the witness swore that there was at least 5 inc. of water in it when they retired to bed. The rupture of the membranes, and the escape of the liquor amnii, would necessarily increase the height of the fluid, and from the spare make of the prisoner, her buttocks would descend considerably into the bucket, and added to this, before the fœtus could escape the os externum, the perineum would be advanced some little more, which left scarcely a doubt that the child was carried by the uterine efforts directly from the vagina, into the water contained in the bucket, and that it never respired, which was borne out by the post mortem examination. Such was my opinion at the inquest, and I there stated that from the post mortem appearances, I was of opinion that the child had not breathed.

The jury returned a verdict that the child came to its death by "negligence and simplicity," on the part of Zoe L—. The prisoner was sent to the Montreal Prison, and at the quarter sessions she was discharged without a trial, the Grand Jury finding no bill.

I find that a somewhat similar case occurred in London in 1842, when a woman attempted to destroy the child by immersing its head only, in a bucket of water. The child was discovered and resuscitated.

While on this head, I may relate a case similar to one that appeared in your August number, related by Dr. Sewell, of Quebec, but with opposite results; where the woman, aged 40, was walking across her room when a violent pain came on, and expelled the child, which fell upon the floor. The umbilical cord broke about a hand's breadth from the belly of the child. I arrived just at this moment. There was some little irregular action of the uterus, which gave rise to considerable hæmorrhage. The child received no injury, and both the mother and child did well.

CASE OF SEVERE GUNSHOT WOUND IN THE KNEE.

Amputation of the thigh, followed by irritative fever and retraction of the muscles, terminating fatally.

By ALEX. ROWAND, M. D., Montreal.

Between two and three o'clock P. M., on the 19th of October last, I was sent for in great haste to visit Mr. P—, who, I was informed, had received a severe wound in the knee, from the accidental discharge of his fowling-piece. Accompanied by Dr. Badgley, I immediately proceeded to the spot where the unfor-

fortunate event had taken place, which was at the end of the island, about thirteen miles from Montreal. Arrived at the Ferry-House, at about half-past six o'clock P. M., we there found our patient with his left leg and thigh bandaged up, and were informed that about noon, his gun, which was resting with the muzzle close to his knee, was discharged, by his dog running against it, and the whole of its contents were lodged in his thigh. On examination, we found the charge had entered on the inner side of the left knee, about an inch from, and a little below, the patella. It had taken a direction upwards and outwards and lodged itself on the outer part of the thigh, immediately under the skin—about two inches and a half from the knee-joint. The patella was uninjured, but the lower end of the femur, to the extent of about two inches, was completely crushed, and broken up into small fragments. The patient was a gentleman of about 30 years of age, of a florid complexion, of a sanguine-nervous temperament, and of very active personal habits. He had always enjoyed excellent health, but for the last six weeks, had been very closely engaged in business, which had occupied him in his counting-house, from a very early hour in the morning till very late at night. His pulse, when we saw him, was 96, and not very full.

In consultation with Dr. Simard, an intelligent practitioner from the neighbourhood, it was determined, that as the extent of the injury entirely precluded all possibility of saving the limb, amputation should be resorted to, without loss of time, with the view of preventing, if possible, the subsequent occurrence of those dangerous symptoms which are so apt to take place after injuries of this nature. It was also determined that it would be highly imprudent to remove our patient to the city before the operation, as we considered that the delay which would necessarily be incurred, by having to send to Montreal for a proper conveyance, and the additional nervous irritation that would be excited by the performance of a journey of thirteen miles, under such circumstances, would materially interfere with its successful result. An immediate operation was therefore determined on, and on our views having been communicated to the patient, he at once yielded to the necessity of the case and consented to its performance.

There being no proper accommodation for him where he then was, he was conveyed to the house of Mr. Ross, on the Isle of Bourdon, where he could be conveniently attended to; and at six P. M., I proceeded to remove the limb by the circular operation at the lower third of the thigh—four vessels were tied, and the integuments were brought together by three sutures.

The stump had a good appearance, and the end of the bone was well covered. The limb seemed somewhat fuller of blood than usual, which probably arose from some impediment to the venous circulation caused by the original injury. Our patient, who had borne the operation with remarkable fortitude, was then placed in bed, and an anodyne of 60 drops of laudanum was administered.

For the three first days every thing went on well, the patient remaining free from fever, and expressing himself as quite comfortable; pulse generally about 90.

On the 23rd, four days after the operation, the bandages were removed for the first time: the wound looked remarkably well, with slight suppuration, but the patient complained of the pain caused by the dressing. Pulse slightly accelerated but soft—tongue moist and clean—bowels acted on by an anema—urine copious—had slept well during the night, but was observed by the person who sat up with him to be restless during it, often changing the position of his head, and moving his arms about—to have an anodyne at night.

24th.—Passed a restless night, and complained of uneasiness in the stump—had disturbed dreams about his business during the night. Stump was dressed in the presence of Dr. G. W. Campbell, who had been requested to attend, and found looking well, but the operation of dressing again gave rise to a good deal of irritation. Pulse quicker but soft and compressible—skin moist—tongue clean—bowels open—urine copious and clean. On the evening of this day, an unusual noise being heard in his room, I (having remained in the house) was immediately called, and found him giving utterance to a loud, prolonged, and somewhat shrill, moaning cry; his mouth was drawn considerably to the right side, and he seemed to be suffering from a pretty severe spasmodic attack. These symptoms however soon subsided, and during the rest of the night he slept, but rather uneasily.

25th.—Countenance anxious—body bathed in perspiration—pulse 116, small but soft—tongue moist—bowels open—urine copious—has had a rigor terminating with a hot stage and copious perspiration. To have small doses of quinine with acid four times a day, and to be allowed London Porter with oysters.

26th.—Stump dressed again to-day, and the wound appeared healthy. Countenance slightly flushed—pulse and secretions as yesterday. Had a glass of Dow's ale instead of porter, as there was no porter in the house. Dr. Campbell suggested the propriety of discontinuing the prescription of yesterday, which was accordingly done.

28th.—Report the same as yesterday and on the 26th.

29th.—Passed a restless night and talked a good deal. Pulse and secretions as at last report.

30th.—Stump dressed again to-day. Some retraction of the muscles, and the end of the bone exposed—healthy granulations at each side. Two of the ligatures came away in the dressing—had another rigor during the night—other symptoms as formerly.

31st.—Report the same as yesterday. Ordered to re-commence the quinine and porter.

Nov. 1st.—Patient appears somewhat better, though pulse is at 120 and rather weak—is very desirous of being conveyed to town—had an agueish fit during the night, and passed his fœces involuntarily whilst asleep, owing, probably, to the action of a purgative he had taken during the day.

2nd.—Was removed to town by the Steamer—at six P. M., the stump was dressed—about a quarter of an inch of the bone was exposed, and found to be denuded of periosteum—on consultation it was determined that this should be removed, which I accordingly did with a metacarpal saw—a good deal of pain was caused by the operation, and an anodyne was administered.

3rd.—Had another agueish fit at five o'clock this morning, which lasted about two hours—pulse 120—weak—bowels open—urine copious, and skin bathed in perspiration.

This state continued without much alteration until the 10th, when it was determined to have recourse to the sulphate of quinine, in 2 gr. doses, with a glass of Madeira wine every three hours.

On the 12th, severe rigors came on which could not be controlled, and he lingered till the 15th, when he expired at 4 o'clock A. M.

On the morning of the 13th, when the stump was dressed for the last time, it was observed that the union which had taken place in the integuments covering the lateral portions of the stump had been broken up, and on the 14th the secretions from the wound were entirely arrested. Unfortunately no post-mortem examination could be obtained.

The above case presents several points of much interest, as evidencing a very peculiar idiosyncrasy of a morbid character, in a previously very healthy person; and having been lately in New York, I was induced to express these points, in the form of interrogatories, and lay them before Dr. Robert Nelson, of that city, and formerly of Montreal, for his opinion. As he is a Surgeon whose great practical skill and professional attainments are no where more highly appreciated than in this city, I subjoin them, along with his answers, for the perusal of your numerous readers.

Having heard the verbal statement of Dr. Rowand,

and read the written one by Dr. Badgley, descriptive of the case of the late Mr. P——, the undersigned replies to the several questions submitted to him for his opinion, as follows:—

Question 1st.—Was the nature of the injury and the condition of the patient's constitution such as to demand immediate amputation?

Reply.—Yes; for the following reasons: 1st. The extensive laceration of the membranous parts, and more extensive fracture of the head, and condyles of the femur were such as to banish all hope of saving the limb. 2nd. Since no hope of restoration of the limb remained, and knowing that the severity of almost all surgical cases is proportionate to the extent of severed surface, no rational or experienced Surgeon could hesitate on the propriety of diminishing such extent; and as amputation not only offered the means capable of effecting such diminution, but also would become indispensable at a future time, should the patient survive the first periods of the injury, it was undoubtedly called for. 3rd. Six hours from the moment of the accident to the time when amputation was performed, was a period amply within the one, beyond which, in certain cases, grave operations ought to be further delayed. 4th. There was nothing in the temperament, as stated, of the patient, either of a depraved habit, irritable or inflammatory nature, capable of offering an objection to early amputation, more especially as that operation would undoubtedly diminish the extent of injury, and subsequent effects.

Q. 2nd.—Did the condition and circumstances of the case justify an antiphlogistic treatment to its full extent, or not?

R.—Certainly not. The patient must have lost several ounces of blood from the accident; and at the operation "more blood was lost than is usual." The first, and particularly the second hemorrhage, was well calculated to anticipate any excess of inflammation capable of supervening, and which is never sufficiently great, in injuries of limbs, to require "the full extent of the antiphlogistic treatment. And subsequent to the operation, the case does not offer a single symptom of high inflammation; but on the contrary, the moist tongue and skin, copious and pale urine, were all indicative of any thing else than greatly excited vascular action. Under all these considerations, an antiphlogistic treatment, to its full extent, would have hastened the fatal termination of the case.

Q. 3rd.—Were the rigors the result of phlebitis and secondary deposits, or merely produced by the shock sustained by the brain and nervous system?

R.—The absence of sthenic vascular symptoms, and prevalence of systemic irritability, strongly lead to a

belief in the existence of the condition mentioned in the first member of the query; but, as no autopsy was had, and as similar cases to the one in question are not very uncommon, even when phlebitis and purulent deposits have not been detected on examination, after death, this interrogatory cannot be affirmatively answered. As regards the remainder of the question, "were rigors produced by the shock, &c.," there can be no hesitation in saying that the *shock effect* of the accident had passed off safely, and that these rigors were synchronous with the invariable phases and periods of purulent formations.

Q. 4th.—Was the removal of the exposed bone advisable, under the circumstances, or not?

R.—The disturbance to the constitution, producible by a protruberant femur, after an amputation, is much less than many Surgeons are led, from inexperience, to believe. As a general rule, it had better not be touched until all the first consequences of the operation have run their course.

Q. 5th.—How is retraction of the muscles and exposure of the bone to be accounted for?

R.—Retraction is always due to irritability, either general or local. Under the first, the patient imminently suffered.

Q. 6th.—Which operation, the circular or the flap, ought to have been performed.

R.—Either one would do well in ordinary circumstances. The advantages afforded by the latter operation are in its favor; but it is only the shallow followers of novelty who suppose that good cures are not daily made by the circular mode. Are there not thousands of persons *now* living with good stumps, the amputation having been the circular operation.

R. NELSON, M. D.

REPLY TO DR. RÆE'S OBSERVATIONS ON THE
HYPOTHESIS OF THE PREVIOUS EXISTENCE OF
A FRESH WATER INLAND SEA ON THE CONTI-
NENT OF AMERICA.—CONTINUED.

By Rev. W. T. LEACH, A. M.

In a previous paper published in the *British American Journal* of April, I took occasion to notice the existence in the valley of Cassel in Germany, of water-formed terraces similar to those which form such prominent phenomena in Canada. These terraces were long ago remarked by Raspe, who published a section of the valley with a description exhibiting the level of an ancient sea. In this case the fossils deposited in the superficial strata leave no doubt that the German Ocean then extended over the inferior levels of the Continent, while, as Raspe has observed, the highest summit of the higher mountains which enclose the valley must needs, as so many islands, have been apparent above the level of this ancient sea. The fossils are numerate, and are a

known species, common on many shores of the Northern Seas. Here then we have a case exactly parallel to the one in question, and corresponding, as both do, in every material circumstance, some value must attach to the evidence hence derived, especially when no other similar instance can be referred to of an inland fresh-water sea attended with effects so closely resembling each other in the respective instances. This, and a few instances recorded by geologists, were adduced as evidence for the view advanced in the April number of the *British American Journal*.

I observe that a late writer, whose work since then has reached us, makes a special reference to the subject in the following terms:—"There is another set of appearances which as manifestly show the steps by which the land was made afterwards to reappear. These consist of *terraces* which have been detected near, and at some distance inland from, the coast lines of Scandinavia, Britain, America, and other regions, being evidently ancient beaches or platforms, on which the margin of the sea at one time rested. They have been observed at different heights above the present sea level, from twenty to above twelve hundred feet; and in many places they are seen rising above each other in succession to the number of three, four, and even more. The smooth flatness of these terraces, with generally a slight inclination towards the sea, the sandy composition of many of them, and in some instances, the *preservation of marine shells in the ground, identify them perfectly with existing sea-beaches*, notwithstanding the cut and scoopings which have at frequent intervals been effected in them by water-courses. The irresistible inference from the phenomena is, that the highest was first the coast-line; then an elevation took place as the second highest became so, the first being now raised into the air and thrown inland. Then upon another elevation, the sea began to form at its new point of contact with the land, the third highest beach, and so on down to the platform nearest to the present sea-beach."

The same writer proceeds to state various facts that corroborate the general account he has just given, of the cause of the phenomena presented by the marginal lines or terraces. He gives us to know, that evidence has been advanced, that the last sixty feet of the elevation of Sweden, and the last eighty-five of that of Chili, have taken place from the commencement of the human memorials that have come down to us; he even states it as a matter thought to have been ascertained by evidence, that the process of elevation in Sweden, takes place at the rate of forty-five inches in a century; nor is it improbable, that this rate might be found with some accuracy, provided it be restricted to a limited geological period, and is not understood, as pretending an approxi-

mation to a rule, by which the elevation of extensive regions may be computed to have taken place at previous periods. After mentioning the instance of the rise of the-Chilian Coast in 1822, he adds, "In an inquiry on this point, it becomes of consequence to learn some particulars respecting the levels. Taking a particular beach, it is generally observed, that the level continues the same along a considerable number of miles. A second and third beach, are also observed to be exactly parallel to the first. These facts would seem to indicate quiet elevating movements, uniform over a large tract. It must, however, be remarked that the raised beaches at one part of a coast, rarely coincide with those at another part, forty or fifty miles off. We might suppose this to indicate a limit in that extent of the uniformity of the elevating cause. But, whatever doubt may rest upon this minor point, enough has been ascertained to settle the main one, that we have in these platforms indubitable monuments of the last rise of the land from the sea, and the concluding great event of the geological history."

Whatever credit the conclusions of geologists may generally be thought worthy of, it must be admitted that they act fairly, if they fairly exhibit the grounds that sustain them. You have the facts, judge of the conclusions who will. It is true, that in natural science, many facts advanced as such, may, upon attentive sifting and careful examination, be found to have no title to that character, they are then only stubborn things, when they are found to be true things, and the finding them to be so or not, together with the multiplication of them by the industrious observation of the student, constitutes the chief value of the inductive philosophy; and if the additional facts which the author, whose views upon this subject I have transcribed, are to be depended upon, and that under the limitation that has been assigned to the most remarkable of them, I hold the question as to the formation of the parallel lines by the waters of the ocean, and consequent negation of any inland fresh-water sea as their cause, to be a conclusion as valid as the nature of the evidence, which in such cases is necessarily but of greater or less probability, permits us to attain.

Speaking of the Canadian Lakes and Valleys of the St. Lawrence as phenomena, whose cause might be explained, in harmony with the hypothesis of a gradual, though irregular elevation of the continent, reference was made by me to the insufficiency of the water-scooping theory; and the formation of the Lakes was attributed to unknown causes which excepted their internal or lower superficies from the operation of the elevating force or forces. As to the cause of these exceptions, nothing was alledged; represented as *intercapedines*, no closer approach was made to a hypothetical assumption of the

causes; and such they may be, leaving the nature and quality of the subterranean forces untouched—nothing written, nor said, nor, it may be, supposed, concerning them. Either the force was not there equally directed upon the interior of the extended mass, or if it were, did the mass oppose an equal resistance. Dr. Rae very properly remarks with regard to this, that in the present state of our knowledge, it is premature to pass an opinion, or nearly in words to that effect. It may be said, however, that the opinion then announced, has no reference to the immediate causes, and leaves the whole inquiry, respecting them, open to investigation. I consider this inquiry to be one of the greatest possible moment in geological science, and that there are no phenomena which the extended territory of Canada presents, nearly so deserving observation and study.

SURGERY.

FISTULA IN ANO TREATED BY LIGATURE.

By ——— LUKE, Esq.

The following cases are illustrations of the treatment of fistula in ano by ligature kept moderately tight, by means of a small screw tourniquet, thus gradually dividing by ulceration those parts usually divided by the knife.

The advantages of this method of treatment over the treatment by the knife are,—1st, The shorter period which usually elapses before the final cure; 2nd, The less pain which is usually experienced during the treatment; 3rd, The absence of all cause of dread of the knife, and the consequent inducement which it offers to the timid to an effective curative treatment; and lastly, the avoidance of all danger from bleeding—an advantage of great importance in the deeper forms of fistula which communicate with the rectum at a considerable distance from the anus. The treatment is conducted in the following manner:—An eyed probe, armed with dentists silk, is introduced in the ordinary way through the fistula into the rectum, from whence the silk, together with the detached extremity of the probe, is withdrawn through the anus by means of a spring catch introduced into the rectum upon the forefinger of the operator.

The parts to be divided are thus enclosed between the two extremities of the ligature, to which a small fistula-tourniquet is subsequently attached by passing them through holes provided for the purpose, and knotting them so as to prevent their being withdrawn. A screw is then applied, by the turning of which the requisite amount of tension is kept up. When the fistula does not communicate with the rectum, a perforation is made in its walls by the eyed probe, the extremity of which is made sharper than that ordinarily used. In other respects, the passing of the ligature, and the attachment of the tourniquet, is conducted in the same manner as when there is both an external and internal opening. It should be observed, that the passage of the ligature is accomplished with great facility, and with little if any more pain than attends the ordinary examination of a fistula with a common probe. Care is also taken that the tension of the ligature is never so great as to cause more than slight uneasiness at the part, and at its first application is usually left loose, to allow for swelling of the enclosed part arising from the slight inflammation which is caused by its pressure. After the lapse of three or four days, ulceration of the enclosed part commences, and the

tourniquet becomes loosened, indicating the necessity of the ligature being made tighter. This is done every three or four days, by making two or three turns of the screw with a watch-key fixed on a handle. While the process of ulceration is proceeding, a process of granulation is filling up the cavity behind the ligature, and on this account it is not desirable that the ulcerative process should proceed very rapidly, lest the latter should not proceed *pari passu*, and a cavity be left unclosed. When a case has proceeded favourably, it usually happens that it may be reported as cured within one or two, or at most a few days after the complete division of the enclosed parts and consequent falling off of the tourniquet. During the treatment, it is desirable that causes tending to produce inflammation should be avoided, but in many cases the confinement of the patient is unnecessary, and moderate exercise may be used. Should inflammation, however, supervene, much pain is experienced by the greater tension given thereby to the ligature, the obvious remedy for which is the loosening the ligature by reversing the screw of the tourniquet.

[Mr. Luke then relates nine cases in which this method was tried. In the first the ligature was applied on the 6th of March, and came away on the 17th—11 days. In the second the ligature was applied March 25th, and came away April 9th—15 days. It was applied in the third case May 2nd, and came away on the 11th—9 days. The average time that elapsed between its application and its coming away was about a fortnight, and a few days more were generally required before the parts were perfectly healed.]—*Lancet*, Feb. 22, 1845, p. 221.

[Mr. Lomas, of Manchester, gives us his method of using the ligature in fistula in ano, as follows:—]

I employ a fine metallic wire of silver or platinum. Having passed a probe director (one of Sir Benjamin Brodie's) along the fistula and through its internal orifice, its point, being very flexible, is readily directed downward and out at the anus, by the finger previously introduced within the rectum; the structures to be divided are now upon the instrument, and, as it were, everted. The wire is then passed along the groove of the director, and the ends are crushed together until a very moderate compression is exerted upon the enclosed parts. It promotes the personal comfort of the patient to leave the twisted ends rather long, and to fix them on the sacrum with a cross slip of adhesive plaster. This trifling arrangement allows the buttocks to lie perfectly apposed, and he (the patient) is free from the disagreeable sensation of an interposed body or rough point, and visits the closet more comfortably. All that remains to be done is to twist up the ligature as it becomes slack, and in a week, or a little more, it is free. I do not confine the patient altogether; it is, however, advisable to keep him on the sofa for the first twenty-four hours, as erysipelas might arise in a bad subject, and also to limit his movements considerably during the entire treatment.

[He remarks, that he has found no strong reason to prefer it to the knife, and thinks that the plan of presenting the parts for division upon Sir B. Brodie's probe director, and dividing them with a sharp bistoury, is an operation so short, simple, and effectual, as to leave nothing to be desired.

The opinion of Mr. Luke, of the London Hospital is, that the ligature consumes decidedly less time in establishing a cure than the knife.]—*Medical Gazette* March 14, 1845, p. 766.

[Mr. Henry Burton, surgeon, Stoke Newington Road, from personal experience, gives a decided opinion against the ligature. Its application gave much pain in his own person, and caused great irritation; in a fortnight a second ligature was applied, which gave him dreadful torture, so that five days after he was obliged to have it cut out, the local and constitutional irritation became so great. Besides this, the irritation produced fresh suppuration, and two additional sinuses, for which he was operated on in the usual

manner, and he declares that the whole of the pain was not a tithe of what he suffered under the ligature martyrdom.

A medical friend of Mr. Burton's underwent precisely the same ligature treatment, but found it so intolerable that he soon gave it up, thus escaping the aggravation of the disease entailed upon Mr. B. for his perseverance.]—*Lancet*, April 12, 1845, p. 427.

[Mr. Luke, in reply to Mr. Burton, considers that the ligature was not properly applied in Mr. B's case, and from nothing being said regarding the amount of tension subsequently used, we cannot judge whether the practice was such as Mr. Luke recommends.]

Now, in order that the ligature should be properly managed, it is necessary that it should not at any time be drawn so tense as to cause pain, and generally for the first few days should be left without any tension whatever upon it.

[As Mr. Burton speaks of the insertion of a second ligature. Mr. L. thinks it probable that the operator possessed no means of gradually increasing the pressure, and, therefore, that the first ligature was drawn at least moderately tight, which of itself would cause considerable pain, even without the increased tension given to it by the swelling of parts subsequently to its insertion.

Mr. L. also expresses it as his opinion,]

That the slow operation of the ligature may with advantage be made extensively available in practice, beyond its application to fistula in ano merely, as in the obliteration of veins when varicosed, either in the leg or in the spermatic cord; in the removal of tumours, when they are so vascular or so situated as to render the use of the knife dangerous; or in certain cases where the dread of the knife cannot be surmounted; and lastly, in laying open extensive sinuses, where, from their magnitude, the use of the knife would be attended with danger, or where, from the intervention of vessels, there might arise a risk of dangerous hæmorrhage.

In all the above cases, (in varicose veins of the leg excepted) I have availed myself of the slow operation of the ligature, and I think with much advantage to the patients who have experienced its use.—*Lancet*, April 26, 1845, p. 482.

[The following is a description of a new instrument for applying ligature in fistula in ano, by Dr. Nelken:—]

This instrument is composed: 1^o of a rod, about 11½ inches in length, the upper third of which is divided into four equal parts, united to each other by hinges, so arranged, that they can be closed only in one direction, the last being furnished with a knot, and a hole to pass the ligature; and 2^o of a tube through which the former is passed when threaded. The finger being placed in the rectum, the apparatus thus prepared is passed upwards into the fistula, until the extremity reaches the finger, the tube is then withdrawn to an extent equal to one of the four divisions of the rod; the whole is next pushed forwards, the finger in the rectum causing the rod to bend downwards as it penetrates into the intestine; the same manœuvre is repeated until the ligature appears at the anus, when the surgeon seizes it, and terminates the operation.—*Medical Times*, Feb. 8, 1845, p. 403.

ON RELAXED RECTUM.

By HENRY HUNT, Esq., M. D.

Dr. H. describes this as a malady of not unfrequent occurrence, and productive of much inconvenience and distress. The most prominent symptoms are, obstinate constipation, a frequent desire to evacuate the bowels, a constant sensation of load in the rectum—which is not relieved by an evacuation—and the discharge, after much forcing, of mucus streaked with blood. The bladder, urethra and the adjacent organs, often participate in the irritation. On examination, the rectum will be found preternaturally enlarged, and more or less filled with large folds of mucous

membrane pressing down on the anus, which impede the evacuation of the fæces, introduction of instruments, and the injection of enemata. This morbid condition of mucous membrane, the author attributes to a neglected state of the bowels, and repeated great distension of the rectum by fæces, which causes the mucous membrane, when the bowel is empty, to hang in loose folds. This disease, if neglected or mismanaged, gives rise to prolapsus ani, an irritable and painful state of the sphincter, and an intro-susception of the upper and undilated portion of the intestine, into the lower and dilated part. The treatment recommended for the simple relaxed rectum is, the avoidance of all aperient medicines, and the injection of a pint of cold water into the bowel every night previous to going to bed, the removal of the prolapsus, and the application of belladonna ointment to the irritable sphincter. In the case of intro-susception of the rectum, in addition to the use of the cold water injection, the exhibition of some mild aperient, taking care that whilst a costive and hardened state of the fæces is prevented, purging is avoided, and a course of the hyd. cum creta, with hyoscyamus or conium, or the iodide of potash and sarsaparilla.

[Dr. James Johnson disagrees with Dr. Hunt with respect to the use of mild aperients. He considers them to be essential to the successful treatment of the affection. He says—]

In cases of constipation, it is essential to effect a cure that the colon as well as the rectum should be acted upon. Fæces often collect above the rectum, and cannot be reached by small injections of cold water. These injections are, moreover, not so harmless as people seem to imagine; at all events, he has seen them productive of violent tormina and great pain; in some instances, producing faintness. He would, in this class of cases, administer some mild aperient, which would act on the colon, and soften the fæces in that tube—such, for instance, as the tartrate of potash or the confection of senna.

These medicines produce no irritation or unavailing efforts to evacuate the rectum: on the contrary, they soften the fæces above, and soothe rather than irritate. In the second class of cases mentioned, in which there was intro-susception of the rectum, he has found Ward's paste corrugate the folds, and give tone to the heart. In this class of cases, when the bowels have protruded, and have not been carefully returned, it was liable to become inflamed, and be productive of great suffering. When persons so afflicted walked about or sat down, this was liable to occur. The most efficacious mechanical contrivance with which he was acquainted for the support of the rectum *in situ*, was the application of two silk handkerchiefs, one of which was to be passed round the waist, and one end of another tied behind, and the other end in front—a piece of soft sponge, covered with linen, being placed in the middle, so as to exert gentle pressure on the extremity of the bowel. This was simple, and easy of application. All instruments for the purpose he had found inefficient.

Mr. Bransby Cooper agreed with Dr. Johnson in reference to the expediency of applying remedies that would act on the colon in the first class of cases described by Dr. Hunt. He considered, however, that the application of handkerchiefs in cases of prolapsus recti, as recommended by Dr. Johnson, was far inferior as a remedial agent to the plan mentioned in the paper—namely, that of evacuating the bowels at night, just before retiring to bed. In diseases of the rectum, this rule was one of the greatest importance. If the bowels were evacuated in the morning, the patient either moved about, or remained in the sitting posture, by which irritation was kept up, and there was no opportunity of keeping the rectum *in situ*. When evacuated just before bed-time, the patient remained in the recumbent position for many hours, and the affected bowel was, during the whole of that time, in the pelvis. By this simple plan

a cure was effected without the use of instruments or of medicine, both of which combined would only alleviate and not cure.

[For the support of the rectum in these cases, we have found an instrument made by Mr. Eagland of Leeds, of the greatest service and efficacy. It consists of a circular spring to go round the loins something like the common truss. To the posterior part of this is fixed another spring, which is brought down as far as the anus and terminated by an ivory ball, and fixed in front like a suspensory bandage by two side straps. This ivory ball, which is oval in shape, keeps up the gut very effectually, in the same way as a prolapsed uterus or a hernia is kept up.]—*Lancet*, Dec. 7, 1844, p. 326.

In cases of constipation from relaxation, aloes in combination with sulphate of quinine was a favourite prescription of Dr. Abercrombie, and often succeeds remarkably well, especially in persons advanced in life.

In cases of great dilatation, might not injections of nitrate of silver be of service, administered as recommended by Trousseau in the diarrhoea of children? (See *Northern Journal of Medicine*, vol. i. p. 347.) It has a great effect in producing contraction of the calibre of the vagina.

In the habitual constipation which so often produces this affection, Dr. Graves, after objecting strongly to the use of mercurial purgatives, recommends the following combination:—

℞ Electuarii sennæ ꝑii.; pulv. supertart. potass. ꝑss.; Carb. ferri ꝑii.; Syrupi Zingib. q. s.—℞. electuarium.

The dose must be regulated by its effects, but in general a small tea-spoonful in the middle of the day and at bedtime will be sufficient.

Dr. Graves says, that the value of carbonate of iron as a tonic aperient has not been appreciated.—*Northern Journal of Medicine*, Jan. 1845, p. 185.

ON THE DIAGNOSIS AND TREATMENT OF FRACTURES.

By — STANLEY, Esq., of St. Bartholemew's Hospital, London.

In certain cases wherein the occurrence of fracture is not plainly indicated by the mobility or distortion of the part, or by the existence of crepitus, there is one strongly presumptive sign of it, the attention to which has often helped us in doubtful cases, especially in the instances of fracture of the lower end of the tibia and fibula, also of the head of the tibia; this sign is, an acute tenderness of the periosteum manifested in handling the part, combined with deep-seated œdema from serous effusion into the cellular tissue around the periosteum. An experienced hand and eye will readily distinguish these circumstances characteristic of fracture, from the general swelling and tenderness of the soft parts, the result of simple contusion. A man at the present time in the hospital was admitted shortly after he had slipped down in the street; there was no distortion of the leg, and no yielding or crepitus could be anywhere detected; but such was the acuteness of the pain occasioned by pressure of the lower part of the tibia, with the evidence, besides, of the deep œdematous swelling over this part of the bone, that the fracture of it was suspected; and accordingly the limb was confined in splints. Ten days afterwards, an oblique ridge on the lower and front part of the tibia shewed that the bone was broken, and that the diagnostic sign of the fracture had been of some value in determining the treatment. Crepitus is frequently but a doubtful sign of fracture, especially in the injuries of bones near their articular ends; here it may be caused by an alteration of the synovia within the sheaths of the surrounding tendons, or within the contiguous joint; and, in injuries of the hip or shoulder, when the displaced head of the femur or humerus lies in contact with a surface of bone beyond the articular

cavity, in moving the limb a grating sensation may then be communicated to the fingers, so closely allied to that of fracture, as to be with difficulty distinguishable from it. In the shoulder, for instance, when the head of the humerus is driven between the subscapularis muscle and the scapula, the movements of the arm will communicate to the hand of the surgeon a grating sensation not distinguishable from the crepitus of fracture. As it concerns the diagnosis of fracture, it must be borne in mind, that by the operation of the force which has broken a bone, its ends may get so firmly impacted together, as not to be separable without violence; hence it has happened that a man with both bones of his leg broken has been able to bear considerable weight on the limb. I had a patient whose tibia and fibula were broken about their middle, by the kick of a horse; yet he contrived, with the help of a stick, to walk from Highgate to the hospital, a distance of between four and five miles. Under circumstances of doubt, assistance in the diagnosis may be obtained by ascertaining in what manner the accident occurred; and here it is to be recollected, that a shock imparted to the distant part of a limb may cause the fracture of the shaft of the femur or tibia. A man had just raised a sheep-hurdle from the ground, and was holding it in his hands, when a gust of wind turned him round with the hurdle; the great toe of his left foot coming against a stone, he immediately felt and heard his leg break; his wife, and another man standing by, also heard the crack. He was directly brought to the hospital, and the tibia was found broken in two places, transversely through its middle, and obliquely through its lower third. Also, on occasions when it would not be expected, an inordinate or spasmodic action of the muscles surrounding a bone may cause its fracture. A coachman, in descending from his seat, felt a sudden twist in his limb; and from that instant he was unable to bear weight on it; he contrived to reach the ground on his other leg without falling, and was directly brought to the hospital, when there was ascertained to be a fracture of the shaft of the femur, just below the trochanters.

Adjustment of fractures.—For this object, in many instances, nothing more is required than that the limb should be placed in an easy posture: directly this is done, the ends of the bone adjust themselves perfectly well. And I have learned by experience, that when on fair effort, by the extension of the limb and manipulation of the broken bone, has failed to effect the adjustment of its ends, there is but little probability of success from a repetition of the same proceedings, to which the obvious objections are, the severe pain they occasion, and the injury they do to the surrounding soft parts. When one well-directed effort by extension of the limb and manipulation of the broken bone has failed to effect its adjustment, we must trust to the chance of its adjusting itself; and if it does not do so, we may assume the existence of one or other of the following obstacles to adjustment, over which extension of the limb, or other proceeding we may adopt, can have but little influence—that the displaced ends of the bone have become firmly impacted together; or that the bone has been broken in two places, and the middle piece displaced, upon which the extension of the limb has no effect; or that a displaced tendon or muscle has got between the ends of the bone; or that one end of the bone has been driven into, and has become firmly impacted in the substance of an adjacent muscle; or that the muscles on one side of the limb having been lacerated, the muscles on the opposite side, their antagonists, acting inordinately upon the broken bone, have displaced it.

[Fractures which are slow of union are happily much more common than fractures which will not unite. Until a few years back, if it were ascertained that a fracture at the end of the usual period had not united, splints were applied, and the patient had still to keep in bed, and if the bones remained ununited after a few weeks more, the fracture was declared incurable.]

But we have now learned by experience that in the event of a fracture failing to unite within the usual period, methods are to be adopted far more gentle, and, what is more important, far more likely to be successful, than any one of the severer proceedings just indicated. These methods are, exercise of the limb for the advantage of the action of the muscles surrounding the broken bone, maintenance of firm pressure against the portions of bone, that they may be kept steadily in contact, and if possible by their periosteal surfaces.

Influence of the action of the muscles around the slowly uniting fracture. Of this there can be no doubt; it is evidenced to us in the many instances of fracture of the tibia not firmly united within the ordinary period, wherein the patient has been desired to move about on crutches, not bearing weight on the limb, but swinging it about freely, and in a short time the uniting medium, which was flexible, is found to be perfectly firm. I lately had in the hospital a woman, aged 32, with a fracture of the femur, at the junction of its upper and middle third; it was treated strictly by confinement on the back with the application of a long splint to the outer side of the limb. At the expiration of two months, the ends of the bone were ascertained to be freely moveable. The thigh was then kept firmly encased in leather splints through the next two months, at the expiration of which the ends of the bone were found to be still freely moveable; it was now determined again to apply the leather splints in a manner to maintain firm pressure against the ends of the bone, and besides, to encase the thigh in the splints composed of layers of linen cemented together by the mixture of white of egg and flour, and around these to apply the starched roller. The limb being thus secured, the patient was desired to move about freely on crutches. Almost from the commencement of this plan, the woman began to express a consciousness of firmness in the limb of which she had not before been sensible. After another six weeks, the bone had become so firm that she could bear weight upon it, and she left the hospital walking perfectly well. I could draw no other conclusion from this case than that the firm union of the fracture was mainly attributable to the adoption of the proceedings having for their object the free action of the surrounding muscles. Since in this case, the firmness of union had not commenced at the expiration of four months from the occurrence of the fracture, it almost warrants the conclusion that no period is too late for the commencement of that stage of the reparative process of fracture upon which the firmness of union depends.

Influence of pressure upon the ununited fracture.—The application to the limb of stiff leather splints, or other apparatus calculated to maintain firm pressure against the bone, is undoubtedly a most important part of the treatment of ununited fractures, and the merit of first establishing it belongs to Mr. Amesbury. It should not be the object to maintain the fractured ends of the bone in contact, but rather that the two portions of the bone should overlap, to allow of their periosteal surfaces being firmly pressed together, for as the tissue of periosteum is more readily disposed to the deposit of osseous matter than the tissue of bone, accordingly by the actual and firm contact of the periosteal surfaces the advantage is obtained, of a better chance of the union of the fracture, which well compensates for the shortening of the limb consequent on the overlapping of the two portions of the bone.

On the Use of the Immoveable Apparatus.—The treatment of fractures by the immoveable apparatus, as it is termed, has been of late especially adopted by Dr. Scutin, Chief Surgeon of the Hospital at Brussels. The object aimed at by this treatment is to avoid the inconvenience of confinement, by enclosing the limb in an apparatus sufficiently strong to prevent the separation of the fractured surfaces, and of sufficient lightness to allow the limb to be moved about with ease. Varieties of apparatus have been recommended for this object; that which I employ in the hospital consists of

the splints, composed of layers of linen, cemented together by a mixture of egg and flour, and of the starched roller. The excellence of the splints thus contracted is, that with the firmness of the case they form, they are so exactly moulded to the inequalities of the limbs, that when confined to it by the turns of the roller, not the least movement of the limb within the splints can occur; and this is obviously essential to the quietness of the ends of the bone. Curiously enough this turns out to be the revival of a practice adopted in bygone times. Cheselden, in his *Anatomy*, states "that a professed bone-setter living in Westminster communicated to him the following method of treating fractures; this way was, after putting the limb in a proper posture, to wrap it up in rags, dipped in white of eggs, mixed with wheat flour; this drying, grew stiff, and kept the limb in good position;" and in his observations appended to *Le Drain's Surgery*, Cheselden observes, "there is no bandage equal to this for a fractured leg. I always use it, leaving that part upon the tibia very thin, that if it grows loose by the abatement of swelling, I then cut out a piece and bind it closer. Upon a journey, I once set the cubical bones of a gentleman's arm that was broken, and making use of this bandage, he, the next two days, made long journeys without any inconvenience, and at the end of forty days took it off, and was perfectly well."

There are objections to the indiscriminate use of the immoveable apparatus, and especially to its application upon a fractured limb immediately after the receipt of the injury; still, however, under certain circumstances, it is a most valuable addition to our plan for the management of fractures. Upon the subsidence of the inflammation and swelling immediately consequent on a fracture, the limb may in general with safety be enclosed in such splints as I have described, and which, when properly applied, will prevent any motion between the ends of the bone, and with a fracture of the femur as of the tibia, by the application of these splints, the patient will be enabled to move about on crutches, and even bear weight on the limb long before the fracture is firmly united. In several cases of fracture of the tibia I have by means of this apparatus been enabled to discharge the patient within little more than a fortnight from the occurrence of the accident, when, for particular reasons, it has been an object of importance to leave the hospital at this early period, instead of remaining here the usual time of five or six weeks.

In another class of cases the greatest benefit has been derived from the use of the immoveable apparatus. I allude to fractures of the thigh and leg in aged persons, in whom, from their not bearing confinement well, the stomach has become deranged, with failure of appetite, and obvious decline of the vital powers; directly these changes are noticed, the injured limb is enclosed in the immoveable apparatus, whereby the patient is enabled at once to get up and move about on crutches, and the unfavourable symptoms have immediately disappeared. I feel certain that by adopting this line of conduct, the lives of some old people have been saved who otherwise would have sunk.—*Medical Gazette*, Nov. 29, 1844, p. 273.

ON AMPUTATION OF THE PENIS.

By ROBERT BARNES, M.B. L.

[Mr. Barnes publishes an account of the mode in which M. Ricord avails himself of the process of contraction after amputation of the penis to keep the urethra open.

The principle of most surgeons in this operation is to counteract contraction.]

M. Ricord's principle is to avail himself of this process of contraction, and turn it to account in preserving the orifice of the urethra patent. The proceeding is this;—having performed the amputation, with the precaution of preserving sufficient skin, and no more, to sheathe the corpora cavernosa, and secured the vessels the surgeon seizes with

the forceps the mucous membrane of the urethra, and with a pair of scissors makes four slight incisions, so as to form four equal flaps; then using a fine needle carrying a silk ligature, he unites each flap to the skin by a suture. The wound unites by the first intention; adhesion being formed between the skin and mucous membrane which become continuous, a condition analogous to what is observed at the other natural outlets of the body. The cicatrix then contracting, instead of operating prejudicially, as in the old methods, tends, on the contrary, constantly to open the urethra, whilst a perfect covering is provided for the ends of the corpora cavernosa. In the spring of 1843, I had the satisfaction of seeing this ingenious operation performed by M. Ricord, at the Hôpital du Midi; when I saw the patient, eight days afterwards, the sutures had been removed, union had taken place between the skin and mucous membrane, and the urine had freely passed without the intervention of a catheter. I saw this patient again when he was about to leave the hospital, at which time the cicatrix was complete, the orifice of the urethra patent; there was an excellent stump, and in short, the operation appeared to be perfectly successful. M. Ricord has performed the operation in other cases, and he reports, with the same happy results. I have performed the operation many times on the subject, and have found no difficulty in the execution of it.

Another inconvenience mentioned by Mr. Hancock, the difficulty of directing the stream of urine, is one which becomes troublesome in proportion to the shortness of the stump. It may be obviated by the contrivance recommended by Ambrose Paré. The patient must provide himself with a funnel-shaped canula, made of box, ivory, or metal, the base of which, being applied over the stump, and resting on the pubes, the other end will serve to carry the urine clear of the person.—*Lancet*, March 8, 1845, p. 266.

ON THE OPERATION OF TRACHEOTOMY.

By ROBERT LISTON, F.R.S., Senior Surgeon to University College Hospital.

(Condensed from the *Lancet*, Nov. 1844.)

The trachea requires to be opened for the extraction of foreign bodies. In this case no time is to be lost, as fatal symptoms may arise at a moment's notice. If the foreign body is loose, it will sometimes fall out by itself as soon as the opening into the trachea is made. At other times, they will not come away for a day or two after the operation. If it be situated above the opening, it may sometimes be disentangled and extracted by a bent probe. It is usually, however, found below; in this case, after having ascertained its exact situation by the probe, it must be extracted by the forceps.

Tracheotomy is also necessary on account of acute disease. Sometimes, in cases of *scalded glottis*, the symptoms become so alarming as to render the operation indispensable. It is occasionally also required, in consequence of wounds in the neck, where suffocation is threatened in consequence of extravasation into the tissues. *Oedema of the glottis* is another affection which sometimes imperatively calls for the operation. In all these cases, we must not wait until death is imminent before we open the trachea, but do so while the lungs and head are as yet unaffected. In some cases of ulceration of the larynx, an opening is made in order to enable the patient to breathe more freely, and to give the ulcers time to heal. The latter indication may be promoted, by touching the diseased part with a solution of lunar caustic.

In *acute laryngitis*, if the disease be confined to the larynx, it may be necessary to open the trachea. In *croup* no benefit will ensue from the operation, because the trachea, and even the ramifications of the bronchi, are involved in the disease. We are not justified in having recourse to

it in the first instance; and after effusion of lymph has taken place, no good can be expected from the proceeding.

When the operation is decided upon, it becomes a question whether the larynx or the trachea is to be opened; under some circumstances cutting into the crico-thyroid membrane will answer the purpose. In cases where there is obstruction at the rima glottidis, as where swelling has followed a scalding of the parts, the high operation may answer; and in cases where a foreign body is lodged in the ventricle of the larynx, an opening in the crico-thyroid membrane may suffice, and in that case should be preferred, as being more simple than tracheotomy. It may be accomplished with any pointed instrument, as a penknife, and without any great incision. This operation will also answer exceedingly well in cases of suffocation caused by the impaction of a foreign body in the œsophagus, and many persons have been thus saved. But in the majority of cases tracheotomy is to be preferred, whether it be impaction of a foreign body in the lower part of the trachea, or in cases of œdema and other diseases of the glottis; for by this operation you get a free opening, and one at some distance from the seat of the disease, which is a point of some importance.

The operation itself is not attended with much danger, as the incision into the windpipe can be made without involving any vessel of consequence. There are sometimes large arterial branches running across the windpipe, but not often; the chief obstacle is the presence of the thyroidal veins. The wound heals with great rapidity; too fast indeed in some cases; for when the operation has been performed for the extraction of a foreign body, blood will sometimes be extravasated, or drop into the trachea and cause suffocation. The best plan, therefore, is to put a bit of lint between the edges of the wound, and cover its surface with a pledget dipped in cold water and frequently renewed. After the incision has been made six or eight hours, the edges may then be brought together, and will speedily unite.

There is little difficulty in getting down to the windpipe in an adult patient, if he is steady, and willing, as they generally are, to be relieved from impending suffocation. The patient is placed in a chair, and an assistant bending back the head, an incision is made from the top of the sternum upwards towards the cricoid cartilage, fully an inch in length, and going through the skin and subjacent tissue. You expose at once the sterno-hyoid muscles and cut through them, the veins and the isthmus of the thyroid body are then pushed on one side, and a clear space is thus exposed for making the opening into the trachea. The patient is then to be desired to swallow his saliva, and while the windpipe is raised by this act, the knife is to be pushed into it, and two or three rings to be cut across. If this has been done in consequence of the presence of a foreign body, this will generally fly out the moment the incision is made, and in consequence of the relief to the respiration and the cessation of struggling, the bleeding, principally venous, will cease of itself. Should it happen, however, that there is hemorrhage from an arterial vessel, it must be secured. In cases of permanent or long continued obstruction at the top of the windpipe, it will be necessary to introduce a tube. There is no sound objection to this instrument. Mr. Liston states that he has tried it more than twenty times, and that it does not cause irritation. He condemns the curved canula and trochar as unsurgical.

The operation is far more difficult in children than in the adult, as the neck is shorter and more laden with fat. The patient, if a child, must be well secured, and the operation is then to be performed as above described, with this exception, that as we cannot get the child to swallow its saliva, the larynx must be raised with a sharp hook. The time for which it is necessary to wear the canula varies ac-

ording to the nature of the disease for which the operation is performed, the only precautions necessary, in connexion with it are to keep it clean, and to cover the orifice with some loose texture, to prevent the admission of cold air.

[In a late number of the *Medical Gazette*, Mr. Cock speaks in very favourable terms of the curved canula and trochar in the operation of opening the trachea. Its principal advantages over the ordinary method, as stated by him, are a saving of time, which in some cases is a matter of great consequence; and the power it gives to the medical attendant of dispensing with assistance. The method of using the instrument, is first to cut boldly down to the larynx, and then to introduce it as in the ordinary operation for hydrocele, the concavity of the instrument of course looking downwards.]—*Half yearly Abstract of Medical Science.*

MIDWIFERY.

EXTIRPATION OF THE UTERUS.

BY M. MOLLET.

Annales de Therapeutiques Jan. 1845.

The subject of this operation was a woman of feeble constitution, æt. 47, mother of three children, who had experienced obscure pains in the uterus for the first time in 1831. The case was supposed at this time to be one of incipient polypus. At the end of 1843 bloody discharges occurred at short intervals, and in the course of the next year became more frequent and abundant. Her general health becoming much impaired she placed herself under the care of M. Mollet.

On the 25th of October the patient suddenly perceived something pass per vaginam, which upon examination proved to be the uterus, completely inverted (?).

It now became a question, what proceeding was to be adopted? Reduction was impossible; therefore the only chance for the patient was either to leave the disease to nature, or to remove it by operation. In the former case, everything was to be feared from the prolonged contact of the air, urine, &c. In the other, a considerable risk had, no doubt, to be encountered; but facts were not wanting to attest the possibility of success. As the patient became daily more and more exhausted, and ulceration with fetid discharge had commenced, the operation was at length decided upon, and performed in the following manner.

At the time of the operation, 11 a.m., the patient was in the following state;—pulse small and feeble; skin soft, without coldness. The tumour was of a grayish white colour, seven inches in length, three and a half in breadth. On the hypothesis that the case was one of total inversion of the uterus, it was agreed that as several important parts, such as the fallopian tubes, ovaries, fundus of the bladder, &c., might be dragged within the concavity of the organ, that an exploratory incision should be made, in order to ascertain what parts had become involved in the misplacement. This was done, after certain precautions had been taken to prevent serious hemorrhage. The bistoury plunged into a somewhat lardaceous tissue; but as no cavity was displayed, it became evident either that the tumour was not the uterus at all, or that that organ had been totally converted into scirrhus. Under these circumstances, it was considered safe to amputate at once by a circular incision. In this manner, the whole of the diseased parts were removed without hemorrhage, the operation lasting only thirteen minutes.

On examination of the parts, it was discovered that the diagnosis had been erroneous; that the uterus was not inverted, as was supposed, but merely dragged downwards by an enormous polypus, which had developed itself on the ostium. The patient died on the fifth day. [Appended to this case are some valuable practical remarks on the diagnosis of uter-

ine polypi, which, as they in some cases are sufficiently doubtful to mislead even the most experienced practitioners, we shall extract for the benefit of our readers.]

“In polypi arising from the interior of the uterus, and projecting into the vaginal cavity, the stalk of the tumour is always found more or less encircled by the lips of the dilated os and cervix of the organ; the tracing, therefore, with the finger, this circle of the cervix round the pedicle of the polypus, forms the most important diagnostic mark in such forms of the disease.

When, however, the polypus arises from the edge of the os uteri, or from the vaginal surface of the cervix, the above important diagnostic mark is wanting, and the case in consequence becomes one, the nature of which is often very difficult to determine. This difficulty of diagnosis does not merely depend upon our not finding the pedicle of the tumour encircled, as is usual in other forms of uterine polypi, but also from the still more fallacious circumstance, that the os uteri though traceable in the stalk of the tumour, is generally so displaced in situation, and altered in form, as to render its identity doubtful. The difficulties attending the diagnosis of those forms of polypus to which these remarks refer, would in most cases be perfectly removed, if we could assure ourselves that the body of the uterus itself was of the natural size, and in its natural position, and that the imperfect cleft that may be traceable on the inside of the tumour was in reality the os uteri. If these points could be fixed with certainty, the attachment and nature of the tumour would at once become evident, the question of the propriety of its removal would be resolved, and the exact point of its removal more safely and certainly determined than otherwise could be. These important points in diagnosis we would in future propose to fix, by introducing the uterine sound into the cavity of the organ, so as to determine the real situation of the os and the position and state of uterus itself, as ascertained by the direction and length of its cavity. The introduction of the instrument in particular cases will require unusual care and patience, in order to pass it through the displaced and altered uterine orifice. But the clear information afforded by the examination in a set of cases which are often so perplexing in their character will amply repay the mastering of any such difficulties as I have presupposed in the employment of the means.”—*London and Edinburgh Monthly Journal*, April, 1845.

SIMPLE ULCERATION OF THE OS UTERI.

(*London and Edinburgh Monthly Journal*, June 1845.)

The occurrence of simple ulcerations of the os uteri was denied by Boyer, owing, no doubt, to the little use made of the speculum in his day. Nothing, however, is more common than the appearance of these ulcers; and it may be said, that every woman labouring under leucorrhœa, purulent or lactescent is affected by this disease, if not with cancer [!] Five or six varieties of this affection are at present under treatment in the wards of St. Louis under M. Jobert, and these have all been carefully studied by means of the speculum. It is so rare in ordinary practice to have so many patients under the eye at one time, and so inconvenient, moreover, to examine them in a suitable manner, that the present opportunity of doing so is interesting. The disease as far as regards the ulceration, presents itself under various forms; but they all proceed from the same cause—hypertrophy of the neck. This hypertrophy, without doubt, precedes the erosion, and is sometimes accompanied with induration, sometimes with softening. The hypertrophic softening is sometimes considerable; in this condition, it presents no morbid sensibility; the ulceration appears, no doubt, as a consequence to this state, and in the natural process of chronic inflammation. The ulcers may have their seat on one or the other lip, sometimes on both; in some instances

they cover the entire circumference of the os tinæ, and in others they are seated deep in the neck of the uterus, where they are concealed by the swelling of the anterior lip; but even here they may be discovered by a proceeding which we shall presently indicate: so much for the seat of the ulcers. As to their form, they are sometimes superficial: simple aphthæ, of the size of a lentil, having their seat on the edge of the neck, and more or less numerous, which is the most simple case; these aphthæ, however, not unfrequently extend, become confounded together, and constitute a superficial erosion of a mapped form, and more or less irregular; the lesion then becomes more serious. It is not necessary, however, that an ulcer should pass through the aphthous stage to arrive at this state, for it may originate at once in the inflammatory process alone. This species of ulceration presents a great resemblance to those large erosions of the superior part of the cornea, described by Velpeau under the term “*Ulceres a coup d'angle*”; it is, however, proportionably much larger. It may be compared more exactly to the surface of a suppurating blister; it is covered with granulations, bleeds easily, and is often infiltrated with blood; its aspect is, therefore, always red, but it is not painful to the touch. It is probable, that those women in whom there is hemorrhage after sexual intercourse, have some slight lesion of this kind.

In a third variety the erosion is no longer superficial, it is hollow, and sometimes very deep. Its base is more or less foul, its surface always of a bright red, and infiltrated with blood. The erosion then very much resembles the ulcers on the legs of varicose subjects, after they have taken exercise. This kind of ulcer often causes a notch on one side of the os uteri, generally on the superior lip. In some cases the ulcer attacks the whole circle of the internal surface of the os uteri, and hollows out a cavity from above downwards. These hollow erosions must always be regarded with suspicion, more especially if they make any progress in depth, for their nature is frequently not simple; and if they have originally been so, they are liable to assume a bad character. As a general rule, an ulcer may be said to be simple when its surface is granular. In regard to form, the third variety resembles the preceding, it differs, however, in situation, being always in the neck. In conclusion we have to repeat that there are three forms of ulcers of the os and cervix uteri; the aphthous, ulcerative abrasions, and the deep excavated ulcer; all, however, are more or less granular. Hollow ulcers which are not granular are suspicious.

Those affected with ulceration of the neck of the uterus are in general young, having seldom passed their thirtieth year; they have usually had a family or miscarriages, and have been for some time subject to abundant leucorrhœa and hemorrhages, or at least to fluxes of blood from the uterus other than the catamenial; their constitution is lymphatic; they are frequently dark women, of ardent feelings, with the pilous system highly developed.

The symptoms are of two kinds. On the one hand, an abundant leucorrhœa, with lactescent discharge; on the other, symptomatic phenomena peculiar to most other chronic uterine affections; viz., lassitude of the extremities, pain and dragging of the loins, want of appetite, and sometimes a painful contraction of the sphincter ani.

A precise diagnosis can only be obtained by means of the speculum; the “*toucher*” alone is insufficient; by its means a state of hypertrophy can merely be ascertained, and that not with much certainty. In order to institute a thorough examination with the speculum, the patient must be placed, not on the edge of the bed, as is generally done, but on a table, with the hips very much raised, and the thighs bent backwards, so that the knees almost touch the abdomen. It is then only by a strong ray of natural light that the fundus of the vagina can be distinctly seen. In order to examine the whole periphery of the neck, a double-

valved speculum ought to be used, the cylindrical instrument does not embrace a sufficient portion of the hypertrophied cervix. At first there is observed on the uterus and fundus of the vagina a quantity of purulent mucus; on removing this, the disease becomes visible, the first thing that strikes the eye is hypertrophy of one or other lip, or of the whole os, and then the ulceration with which it is complicated.

As to the treatment, nothing is more simple or certain. The disease is invariably cured in the course of a few months, by the means employed at St. Louis. Two lesions have to be considered, the one depending upon the other, viz., ulceration and hypertrophy. If these be merely aphthous ulcerations, slight cauterization with the acid nitrate of mercury, or even with the nitrate of silver, speedily produces cicatrization; the remaining hypertrophy, if it is not considerable, may be cured by the ordinary means. If the hypertrophy exist to a great degree, the actual cautery is used from the commencement. The same remedy is used for the third species of ulcer, so as to produce an eschar more or less deep. The cure is generally accomplished in from two to four months, but a sensible amelioration in regard to the pain and leucorrhœa is perceptible during the first week. It seems probable that concentrated heat causes such a modification of the diseased tissues, as to dispose them to the healing process. We earnestly entreat attention to the above facts; the disease is both frequent and disastrous among all classes, and especially in large towns.—*Annales de Therapeutique*, Avril 1845.

THE INVERTED UTERUS SUCCESSFULLY REMOVED BY LIGATURE.

By Dr. McCLINTOCK, Assistant Physician to the Dublin Lying-in Hospital.

The subject of this case was admitted into the hospital on the 30th of August, 1844, æt. 24. As far as could be ascertained she had been the subject of difficult labour with pre-matural presentation, and the attendant had made use of force in extracting the child and placenta. The following morning a tumour made its appearance at the os externum, which was soon replaced; the tumour, however, prolapsed several times subsequently. She then became subject to profuse hemorrhagic losses by which she was much reduced.

Upon examination per vaginam a globular tumour was readily felt, round which the finger could be freely carried, and encircling the upper portion, the os uteri was plainly preceptible. On the 18th September Dr. Johnson applied a ligature of strong fishing-line around the neck of the tumour by means of Gooch's canula; after it was tightened she complained of some pain in the back. On the evening of the next day it was necessary to relax the ligature, in consequence of continued nausea and pain in the belly. To relieve the more urgent symptoms of pain and loss of rest, it became necessary to administer opiates. Within the first two or three days the catheter was also required.

On the 18th day after the application of the ligature it was found that the neck of the tumour was more than half divided, and on the 23th day Dr. Johnston completed the separation by incision. From this time the patient went on satisfactorily in every respect, and was seen in perfect health six weeks afterwards.—*Dublin Journal* March 1845, p. 48.

ON THE EFFECTS OF ERGOT OF RYE ON THE PARTURIENT FEMALE AND HER OFFSPRING.

By SAMUEL HARDY, M.D.

[Long as has been the practice of administering the secale cornutum as an obstetrical medicine, its effects, both salutary and the reverse, are far from distinctly ascertained. The object of the communication, which we shall here condense,

is that of rendering our knowledge upon the subject more precise. In carrying out this object, the author investigates the action of the medicine under the following different points of view]:—

1. *As to the time the action of the ergot on the uterus commences.* From certain tables, this time appears to be in some cases as early as seven minutes after its exhibition, while in others a much longer period is required; the average time appears to be about ten or fifteen minutes. The author considers that it has always commenced within twenty-five minutes at the furthest, when the child has been expelled alive. On the other hand, if a longer time than this has elapsed, instruments have been necessary, and the infant has been born dead. The beneficial action of the ergot is evidenced by the pains running into one another without any appreciable interval.

2. *Effect on the maternal pulse.* This part of the inquiry is one of considerable interest, and has not received the attention from practitioners that it deserves. In nineteen cases recorded by the author, there was a marked diminution in the frequency of the mother's pulse, after the administration of the ergot; and this effect generally commenced within fifteen minutes of its exhibition. In all cases in which the maternal pulse was affected, the fetal heart underwent a corresponding change. Here a practical question naturally arises, Is ergot a safe remedy in relaxation of the uterus, when the woman is reduced by previous hemorrhage? [The author does not give us any decided reply to this question, but contents himself with allusion to a single case in point, in which alarming prostration followed its exhibition.]

3. *The effects of ergot on the fetal heart.* This is said to be still more remarkable than the effect upon the maternal pulse, and therefore demands serious consideration. By reference to the tables, it will be found that in the majority of cases a diminution in the pulsation of the fetal heart, followed the exhibition of ergot. The period at which this commences does not differ from that previously noticed, namely fifteen minutes; the most usual effect noticed by the author is a diminution, in the first place, of the frequency of the pulsations, which is succeeded shortly by irregularity in the beats, or complete intermission. The author here states a practical fact, deduced from his own observations, to the effect that the child is generally lost, however speedily the delivery be completed, if the pulsations of the fetal heart are reduced below 110, and at the same time become *intermittent*. The intermissions are a point of great importance in this statement, for the reduction of the pulse below 110 without this concomitant is not necessarily a fatal symptom.

Many different opinions have been broached as to the modus operandi of the ergot in destroying the life of the fetus, some attributing it to the powerful compression exercised by the uterine wall, others to specific poisonous effect of the medicine. The author thinks that each opinion may, to a certain extent, be correct, but leans evidently to that which attributes it to the poisonous qualities of the ergot.

The depressing effects of ergot upon the fetal heart are so great, that a considerable time elapses after birth before the child can be restored. The author has observed that children equally weak are restored to animation with much less difficulty when ergot has not been given.

The author, in alluding to the proper time at which the ergot should be given for the purpose of restraining or preventing "post partum" flooding, states, that there are three periods at which the medicine may be administered;—first, when the head is about to pass; secondly, after it has been expelled; and thirdly, as soon as the index-finger can reach the insertion of the funis into the placenta.

4. *The state of the uterus and lochial discharge.* After the use of ergot, the uterus has frequently been found much larger than in ordinary labours, as has been remarked also by Dr. Johnson. The lochial discharge was sometimes pale

and scanty. The children which are born alive usually do well.

The mode of administration of the ergot varies with different practitioners. The plan adopted by the author is to infuse half a drachm of the powder in three ounces of boiling water, and after straining to add ten or fifteen grains of fresh powder with a little sugar. This dose is repeated in twenty minutes, and if the uterus does not contract well, is given a third time.

[This interesting paper concludes with five tables arranged under the following heads:—1. Cases in which, after the exhibition of the ergot, the labour was terminated, the children being alive, by the uterine efforts alone. 2. Cases in which children were born alive, but the application of the forceps, or vectus, became necessary. 3. Cases in which the uterus expelled the children still born. 4. Cases where still-born children required instrumental extraction.—*Dublin Journal*, May 1845. (pp. 224—245.)

PRACTICE OF MEDICINE AND PATHOLOGY.

ON THE CO-EXISTENCE OF GRANULAR DISEASE OF THE KIDNEYS,

with Pulmonary Consumption; and on the influence of the Stru-mus Diathesis in predisposing to the Renal Disease.

By THOMAS BEVIL PEACOCK, M.D.

Dr. Bright, in the notes to his tabular statement of the morbid appearances in 110 cases of Granular Disease of the Kidneys, occurring in connection with albuminous urine,* has remarked, that "the instances in which phthisis, or any form of serofulous disease, has been connected with the renal affection, have been decidedly rare, so that in only four cases has recent phthisis developed itself; and what is somewhat remarkable, in more than double that number the disease seems to have made a certain inroad upon the upper lobes of the lungs, and then to have become quiescent, or to have entirely subsided, from which we should perhaps be inclined to infer, that, so far from the diseases being associated, the condition of the body, in this form of renal disease, is unfavourable to the existence of phthisis, or certainly that it is not peculiarly apt to occur in serofulous constitutions." These views have not been confirmed by the experience of other observers. Dr. Christison† says, "I have very little hesitation in putting down the serofulous diathesis among the predisposing causes of granular disorganization of the kidneys. In repeated instances I have been led by the supervention of œdema during phthisis, to examine the qualities of the urine, and, although the result has not been invariable, still in a great proportion of cases of the kind, the secretion has been found to possess the properties essential to the renal disease. In repeated instances the diagnosis during life has been confirmed by inspection of the body after death. On diverse occasions, too, the kidneys have been discovered on dissection in an advanced state of granular disorganization, when the condition had not been attended to during life, and when, nevertheless, from the state of the urine in the bladder, there could be no question that the pathognomonic characters of the disease might have been detected, had not the attention been withdrawn from them by some urgent symptoms."

Rayer,‡ in alluding to the remarks of Dr. Bright above quoted, expresses the concurrence of his experience and views with those of Dr. Christison; and states, that he has in repeated instances found the urine become albuminous during the progress of phthisis, with or without the supervention of dropsical symptoms, and has detected, after death, the characteristic renal disorganization. Martin-Solon—though he found the lungs tuberculous in four out of ten dissections of persons who had sunk under granular disease of the kidneys—regards the two affections as only accidentally co-existent.§ Dr. Osborne, on the other hand, states, that of 36 cases of renal disease with albuminous urine, which had fallen under his notice, four originated in serofula; and in one of the only two dissections of cases of renal affection producing dropsy,

which he relates, the lungs were in an advanced state of tuberculous disease.

These quotations are sufficient to show the difference of sentiment which exists among writers on the Granular Disease of the Kidneys, as to the co-existence of strumous diseases with that affection, and the influence which the serofulous constitution exerts in its production. The data given in the following paper were collected for my own satisfaction, but, as the question to which they refer is both interesting and important, it is conceived that they may be worthy of publication. The points which I shall endeavour to illustrate, are—first, the frequency of the occurrence of tuberculous affections of the lungs, in conjunction with decided granular disease of the kidneys;—secondly, the relative frequency and importance of the efficient visceral complications in that affection;—thirdly, the relation as to priority between the granular affection of the kidneys, and the tuberculous disease of the lungs;—and, lastly, the frequency of the granular disorganization as a secondary affection in phthisis, and the influence which it exerts on the progress of the pulmonary disease.

In these inquiries I shall confine myself to the results obtained by dissection.—M. Rayer having shown—as I have myself seen—that the urine becomes more or less albuminous, in certain forms of secondary tuberculous deposition in the kidneys, or mucous membrane of the urinary passages; and hence, that in cases of phthisis, the diagnosis of granular disease of the kidneys from the state of the urine, is liable to fallacy. The data for the determination of these questions, I have drawn from the paper on Diseased Kidneys connected with albuminous urine, by Dr. Gregory,*—the work of M. Rayer,—and from a considerable number of unpublished cases examined and recorded by myself, in the 7th and 8th volumes of the Register of Dissections of the Royal Infirmary of Edinburgh.

I. In Dr. Gregory's paper, are detailed the particulars of 41 examinations of persons in whom decided granular disease was detected after death, and in the majority of whom it had also been diagnosed during life. Of these cases the condition of the lungs is reported in thirty-one, of which eight presented advanced tuberculous disease; and in a ninth case, a few tubercles were found at the apex of one lung.

M. Rayer has published the dissections of 45 cases of granular disease, exclusive of those of diseased kidney connected with the dropsy consecutive to scarlet fever, and in all of these the state of the lungs is recorded. Of the 45 cases, 12 presented extensive tuberculous disease in the lungs, and in 5 others there existed fewer recent tubercles in the upper portions.

In the Register of Dissections performed by myself at the Royal Infirmary of Edinburgh, in 1842 and 1843, I find recorded the results of examination in 42 cases of decided granular disease—in the larger proportion of which, the affection had been detected during life. In 40 of these cases the condition of the lungs is expressly given; and of these in six they were extensively affected with tuberculous deposition, and in four others there existed fewer recent crude tubercles. Placing together these observations, which do not differ more widely than will always be the case in limited series of facts, it results, that of 117 cases of decided granular disease of the kidneys, extensive tuberculous affections of the lungs existed in 26, and a smaller number of tubercles of recent origin in 10 others; or, out of the 117 cases, 36, or nearly one-third (30.7 per cent.), contained more or less extensive advanced tuberculous deposition in the lungs, a proportion much larger than that already quoted, as deduced by Dr. Bright from his table: it must, however, be observed, that, as in 11 of the cases included in his table, the condition of the lungs is not reported, his statement refers to only 89 cases.

II. The relation, however, which exists between the renal and pulmonary affections will be rendered more apparent, by a comparison of the relative frequency of the tuberculous affections of the lungs, to the other diseases of those organs, and of the heart and liver, which occur in the bodies of persons who have died of renal disease.

The cases which I have before analyzed will furnish the data for this comparison.

Of the cases related by Dr. Gregory, the condition of the heart is reported in 21, of which 7 only presented decided disease.

*Guy's Hospital Reports, vol. i. 1836. p. 381.

† On Granular Degeneration, pp. 112, 113.

‡ Sur les Maladies des Reins, t. ii. p. 313.

§ De l'Albuminurie, p. 238.

* Edinburgh Medical and Surgical Journal, vol. xxxvi. 1831, p. 315. I have not included in my analysis the small number of cases reported by Dr. Christison, as several are also published by Dr. Gregory, and in others the condition of the lungs is not reported.

In the reports of M. Rayer, the condition of the heart is stated in 43 cases, and of these it was flaccid in 21, and 8 others displayed only some slight degree of enlargement with thickening or opacity of the pericardium or endocardium; so that the instances of decided disease amount to only 14, of which two displayed recent false membranes on the pericardium, and 12, more or less extensive hypertrophy, with or without thickening and opacity, or actual disease of the valves. Of my own cases, the state of the heart is expressly reported in 38. It was found healthy in 17, and in five other cases the only abnormal condition was slight increase of size, with or without thickening and opacity of the valvular folds of the endocardium; of the remaining 16 cases, in 2 there existed recent pericarditis; in 9 hypertrophy and dilatation of one or both of the ventricles, with, in some cases, thickening and opacity, but no incompetency in the valves; and in one of these cases the organ had also undergone the fatty degeneration; in four cases there existed aggravated valvular disease, and in 1 true aneurism of the septum ventriculorum. Thus, of the 102 cases of granular disease, in which the state of the heart was examined and recorded, that organ was decidedly diseased in only 33, or including the cases of recent pericarditis, in 37, or 36.4 per cent.

The condition of the liver is reported by Dr. Gregory in 22 cases, of which number it is stated to have been healthy in 12, and more or less extensively diseased in 17. Of the latter class, however, in several instances there seems to have been only trivial alterations of size or colour; and probably, in not more than 8 or 10 cases did there exist organic disease.

In 40 of M. Rayer's cases, the state of the liver is described. In 13 it was healthy; in 7 others it was only more or less engorged, giving rise to slight alterations of size or colour; and in two cases the peritoneal surface was covered by recent lymph, though the texture of the organ was healthy. It thus appears, that not more than 18 cases presented important changes. In 7 of these, there existed marked increase of density in the organ, with or without alteration of size and colour; in 3, there was great enlargement; in 3, cirrhosis; in 3, the organ was fatty; and in 1 it contained tubercle. In one case the nature of the disease is not stated.

In the cases taken from the Register of Dissections at the Edinburgh Infirmary, the condition of the liver is reported in 30. In 11 it is stated to have been found healthy; in 10 others the only alterations were dependent on the degree of engorgement from external causes, combined in 3 cases with thickening, opacity, or adhesions of the peritoneal coat; and in an 11th case, while the substance of the organs was healthy, the serous covering had been implicated in general peritonitis; so that the viscous was organically diseased in only 8 cases, of which 5 were instances of adipose degeneration, with greater or less enlargement; in 2 the organ contained tubercles, and in one there existed early cirrhosis.

The liver was, therefore, organically diseased in 36 of the 99 cases examined, or 1 in 36.3 per cent.

The lungs were examined and reported in 31 of Dr. Gregory's cases, of which 22 displayed different forms of disease, and 8 were decidedly, and one slightly, affected with tuberculous deposition. M. Rayer found both lungs entirely healthy in only 4 cases, out of the 45 which he has reported. In 8 others, however, the only change was more or less decided congestion, dependent on the mode of death or compression from pleuritic effusions, so that the cases of actual disease amount to only 33, and of these the lungs were inflamed and hepatized in 7 cases; the mucous membrane of the bronchi was injected, and the tubes contained much secretion in 9; there existed extensive tuberculous disease in 12, and a few recent tubercles in 5 others.

Lastly, of the 41 of my own cases in which the condition of the lungs is recorded, they were found entirely healthy in 2, and in 10 others presented only compression from pleuritic effusions, or slight degrees of congestion, œdema, or emphysema; and in one the tubes and cells contained blood, from the bursting of an aneurism. There remain, therefore, only 29 cases of decided disease; in 10 of which there existed pneumonic consolidation; in 9, injection of the mucous membrane of the bronchi, and much mucopurulent fluid in the tubes, with considerable congestion or œdema; and in 6, extensive, and in four others slighter, tuberculous disease.

Therefore, of 117 cases in which the lungs were examined, 81

presented different form of disease, or 71.8 per cent. and 36, or 30.7 per cent. more or less extensive tuberculous disease.

It thus appears that

The heart was examined in	102 cases,	and found diseased in	37,	or 36.4 per cent.
The liver	99	“	36,	or 26.5
The lungs	117	“	53,	or 7.18
				Phthisical in 35, or 40.7

Or otherwise, that the diseases of the heart and liver were of equal frequency, and occurred in about one third of the cases; while the lungs were effected in different ways in two-thirds of the cases, and were tuberculous in nearly one-half of these, or in scarcely a less proportion than the whole of the several affections of the heart and liver. This very large proportion afforded by the tuberculous diseases of the lungs in so considerable a number of cases, can, I conceive, scarcely be regarded as accidental, and renders the conclusion almost necessary, that the causes predisposing to the renal and pulmonary affections are closely allied.

III. It might, indeed, be supposed, that the tuberculous deposition in the lungs is secondary to the renal disorder, being superinduced by the consequent deprivation of the constitution, as we find to be frequently the case in chronic visceral diseases. There seems, however, every reason to believe, that tuberculous affections of the lungs are very rarely secondary to the granular disorganization of the kidney. Dr. Christison states, that he has not met with a single instance in which this appeared to have happened; and M. Rayer, while he states that such cases occasionally occur, yet admits their extreme rarity. On referring to the notes of nine of my own observations, in which phthisical and granular disease co-existed, and in which the condition of the kidneys and lungs is fully described, I find that in one case the affection of the kidney was unequivocally primary and predominant;—the kidneys were externally of a pale yellow colour and irregular shape, and internally they presented an extensive small granular deposit in the cortical portion, and between the tubuli, entirely replacing the natural striated texture; while the lungs only contained a small number of gray tubercles in the upper lobes. In a second instance, in which the patient was cut off by an attack of acute pericarditis, the kidneys were found in an advanced state of disease; their cortical portions being infiltrated with a whitish coloured deposit, interspersed with small yellowish tubercular bodies, while the disease of the lungs was in an early stage—those organs containing only a moderate deposit of yellow and gray tubercles, chiefly in the upper lobes.

In two other cases the renal was more advanced than the pulmonary disease; but in these the visceral affections were apparently secondary:—in one case, to caries of the tarsus, for which a partial amputation of the foot had been performed; and in the other, to a venereal taint in the constitution,—the osseous system being throughout extensively diseased.

In a fifth case, there existed advanced granular disorganization, the kidneys presenting a mottled surface, and, on section, being found to contain a copious granular deposit in the striated portion, while the lungs contained old and recent tuberculous disease, in the form of cretaceous masses in the upper lobes and bronchial glands, mixed with yellow and gray tubercle in the crude state; so that the respective dates of the pulmonary and renal affections are doubtful.

In the remaining four cases, the pulmonary disease was evidently primary. The disorganization was in all extensive, and the tubercle had softened, giving rise to caverns, in one or both lungs. And lastly, in four other cases, not previously referred to, there existed renal disease in a recent stage, in conjunction with advanced tuberculous disease of the lungs.

It appears, therefore, that of thirteen cases out of fourteen—the whole of those in which more or less decided tuberculous disease of the lungs and granular disorganization of the kidneys co-existed—the priority of the affection was doubtful in one; in two, the disease of both viscera was secondary to other chronic affections; and in one, or perhaps two, the disease of the kidneys was the primary affection; while in eight cases, the lungs were obviously diseased, primarily and predominantly.

That the lungs should, in the renal disease, be less frequently the seat of secondary tuberculous affections than in most other chronic diseases, may probably be ascribed to the frequency with which these labouring under the affection are cut off by the supervention of acute inflammatory action in the several viscera or serous

membranes. It is improbable that the different results obtained by Dr. Bright from the cases which he has analyzed, and those of other observations, confirmed by the facts I have brought forward, may be ascribed to his having included in his table only such cases as had presented redominant signs of renal disease during life, and in which the tubercular disorganization was consequently only secondary, and not the whole of the cases in which decided granular disease was founded on examination after death. The importance, however, which he attaches to the occurrence in some of his cases of tubercles of old date, and in a quiescent state, in the upper lobes of the lungs, has evincing that the existence of granular disease is unfavourable to the progress of phthisis, is, I venture to suggest, founded on a misapprehension of the frequency of the occurrence of these bodies in the lungs of persons who die, from whatever cause, in the middle or after periods of life,—a frequency which the observations of M.M. Rogée and Boulet in Paris, and of Dr. J. H. Bennett in Edinburgh, show to be greater than would be anticipated by those whose attention has not been specially directed to the subject. The former (C. Rogée. Archives Générales de Médecine, 3 série. t. v. p. 191.) found cretaceous masses in the lungs in 51 out of 100 persons examined, and in 16 they were numerous, and of considerable size. M. Boulet,* in 116 persons between 15 and 76 years of age, met with tubercles in the lungs, altogether free from recent action, in 61; and Dr. Bennett† in 16 out of 73 examinations. It cannot, therefore, be matter of surprise, that these bodies—regarded by those writers, as well as previously by Drs. Home and Carswell, as affording decisive evidence of the curability of phthisis—should have occurred in seven or eight cases of granular disease, out of the 89 reported by Dr. Bright. The ages of only four of those in whom they were found are stated in his table; but all these are at periods of life at which the tuberculous bodies more or less completely transformed into cretaceous matter, are of constant occurrence.

In addition to the evidence that the strumous diathesis powerfully predisposes to the development of the granular disease of the kidneys, founded on the much greater frequency of tuberculous disorganization of the lungs, than of any other single form of visceral affection in the bodies of those who exhibit decided renal disease, whether primary or secondary, still further proof of its influence is afforded by other affections with which the renal disease is often combined. Thus I find of the cases where the lungs were free from tubercle, one patient laboured under strumous ulcers; a second, under chronic peritonitis, and the peritonæum was studded with small granular tuberculoid masses of lymph; in a third, there existed circumscribed peritoneal and pleuritic abscesses, bounded by fibrocartilaginous false membranes, and containing sero-purulent fluid mixed with caseous matter; in a fourth case, the sternum and ribs were carious, and had given rise to extensive abscesses, and other instances of the same kind might be quoted. In several of the cases also in which the lungs were pneumonic, the appearance of the consolidated portions was different from that of ordinary hepatization. They were usually firm, exuded very little fluid on compression, were of a pale buff colour, very distinctly granular when torn, and presented a condition which might be regarded as intermediate between the pneumonic condensation and tuberculous infiltration.

In conclusion, we have seen that pulmonary consumption very frequently co-exists with the granular disorganization of the kidneys, and that, so far from being an accidental complication, supervening during the last stages of that affection, the pulmonary usually precedes the renal disease. We have also founded that in cases where the lungs are healthy, there frequently exist other proofs of the tuberculous diathesis, and we can, therefore, scarcely withhold the conclusion that this constitution very powerfully predisposes to the renal disorganization. The disease is dependent on the scrofulous constitution being most frequent during infancy and adolescence, it follows, that, at these periods, the renal and strumous affections should most generally co-exist. This inference is confirmed, so far as relates to the coincidence of phthisis and renal disease, by the analysis of the cases before referred to. Of the 116 persons whose ages are given, 22 are stated to have been of 25 years of age and under, and of these 10, or nearly one-half (45.4 per 100), presented more or less extensive and advanced tuberculous disease of the lungs; while of the remaining 94, 25 only, or rather more than a fourth (26.5 per 100), were similarly

affected. To say, however, that the connection between the comparatively few cases of granular disease of the kidneys, occurring during early life, and the strumous diathesis, is so invariably as supposed by Dr. Christison, may perhaps be more doubtful.

IV. The 10 cases of more or less advanced granular disease in which the affection was evidently secondary to phthisis, occurred out of 59 cases of that disease in which the condition of the kidneys is expressly noted, being thus in the proportion of one-sixth, or 116.7 per cent. Of 40 cases of consumption examined and recorded by my predecessor, Professor Reid, of which I possess abstracts, there were 6 in which disease of the kidneys was diagnosed during life, and found to exist after death; and in 4 other cases in which the condition of the urine does not appear to have been investigated during life, the organs were found decidedly granular;—being thus one-fourth of those examined. In several of the cases examined both by Dr. Reid, and myself, the condition of the kidneys was doubtful. Dr. Home, in his *Statistical and Pathological report on Phthisis*,* states that the kidneys had undergone the granular disorganization in 4 cases; but as he has not reported the condition of these organs in his table, we are unable to ascertain the proportion which these bore to the whole of those examined.† The granular disease of the kidneys seems to be a more frequent complication of phthisis than the deposition of tubercle in those organs. Dr. Home did not find tubercles in the kidneys in any of the subjects which he examined; of the cases reported by Dr. Reid, 3 only appear to have been so affected; and in the observations which I have myself made, tuberculous depositions were found in the kidneys in only 6 or 10 per cent. The renal complication would therefore appear to occupy an intermediate position, as to frequency, between the almost constantly occurring secondary affections of the intestinal follicles, and of the mucous membrane of the larynx and trachea, and the depositions of tubercles in the viscera, which, after adolescence at least, are extremely rare.

From an analysis of 97 examinations of phthisical subjects performed by myself, I find the relative frequency of the several secondary affections to be as follows:—

The intestinal follicles contained yellow tuberculous matter, or were ulcerated in 85.3 per cent.

The mucous membrane of the larynx, or trachea, was found ulcerated in 70 per cent.

A larger or smaller number of tubercular masses were founded imbedded in the substance of the kidneys, or in the mucous membrane, of the pelvis and ureters in 10.1 per cent.

Tubercles were imbedded in the substance of the liver in 3.1 p. cent.
 “ “ “ of the spleen in 1.9 p. cent.
 “ “ “ beneath the attached pericardium in 1.2 p. cent.

The substance of the heart is very rarely the seat of any heterologous deposit, and the deposition of tubercle in this situation seems especially rare. In the case here referred to, there was a solitary mass of softish yellow tuberculous matter beneath the pericardium covering the right ventricle. I have seen one other instance in which numerous masses of tubercle, varying in size from that of a pin's head to a split pea, had their seat apparently either in the subserous cellular tissue, or on the surface of the pericardium. This was in the case of a female, 25 years of age, whose lungs did not contain tubercle, though the bronchial glands were extensively diseased. This case forms almost the only exception which, out of several hundred examinations, I have found to the general law laid down by M. Louis, that if, after the age of 15, tubercles exist in any organ, they will also be found in the lungs.

The proportion of cases of phthisis in which the renal complication occurs, appears, at first sight, to associate that change with the fatty degeneration of the liver, which, from M. Louis' statement, occurs in France in about one-fourth of the cases, or in 40 out of 120. That the latter affection can only be regarded as accidental, is, however, shown by its very much less frequent occurrence in this country:—thus, in the cases of phthisis examined by Dr. Reid, of which I possess notes, the liver is reported to have been fatty in only 5 out of 35 cases, and in my own cases,

* Edinburgh Medical and Surgical Journal, vol. xlix. p. 1.

† It is curious, notwithstanding the evident frequency with which the renal disease occurs as a secondary affection in pulmonary consumption, that no allusion should be made to the subject by M. Louis, in the last edition (1843) of his *Recherches sur la Phthisis*.

* Comptes Rendus, t. xvi. 1843, p. 143.

† Ed. Med. and Surg. Journal, 1845, April.

in only 8 out of 63. Further investigations are also shown, that though, as observed by M.M. Louis and Bizot, it is most frequently found in persons who have died of phthisis, and in females, it also occurs in those who have sunk from other chronic diseases, and in both sexes.

In the whole of the cases in which the granular disease of the kidneys occurred as a complication of phthisis, the tubercle had softened, and given rise to caverns—in 3 instances in one lung only, in the remaining 5 in both.

In 4 cases, there existed more or less extensive recent pneumonic condensation in one or both lungs, and in 2 the pleura was also found covered by recent membranous exudations, and its sac contained sero-purulent fluid. In a 5th case there existed copious muco-purulent secretion in the bronchial tubes, and the mucous membrane was much injected. In 7 cases the solitary and aggregate glands in the intestines were tuberculous, and the mucous membrane more or less extensively ulcerated, and in one of these there was also recent peritonitis, though no perforation of the canal was detected.

In one case, there was extensive ramolissement of the central parts of the brain, connected with paralysis, first affecting the right side of the body, and subsequently both sides.

In one case, there was disease of the mitral valve, with hypertrophy, and dilatation of the heart.

In 6 cases, the serous sacs contained more or less fluid, and the cellular membrane was œdematous.

In 2 or 3 cases, the fatal event was ushered in by delirium and coma, and might be regarded as directly resulting from the imperfect performance of the functions of the kidneys.

We see, therefore, that the supervention of the renal disease during the progress of pulmonary consumption, both by the great liability which it induces to inflammation of the parenchymatous viscera and serous sacs, and also by the direct effect of the elements of the arrested renal secretion, tends very materially to add to the severity, and hasten the progress of the pulmonary disease.—*London and Edinburgh Monthly Journal Med. Sci.*, Aug., 1845.

REMARKS ON SCARLATINAL DROPSY.

By GOLDING BIRD, A.M., M.D.

[The following may be taken as a sample of the appearances usually presented by a child labouring under scarlatinal dropsy. The patient is attacked, say a fortnight before, with scarlatina, the eruption subsides in a week, and the child seems doing well, but afterwards effusion into the abdomen makes its appearance, which spreads to the extremities; face waxey and puffed, pulse quick and feeble, urine dingy and coagulable, and the surface of the body is dry, smooth, and cold. The treatment is very simple. The patient must be dressed in flannels, kept in bed, and have hot bath every night, and take m x. vin. ant. tart. and m x. syr. papav. in Siii aqua. ammon. acet. every four hours, and gr. iiii ss. p. ipecac. com. c. gr. v. hyd. cum cret. every night, and afterwards, when the œdema has subsided and the urine is improved, ʒj vin. ferri three times a day.

The causes by which œdema and congestion of the kidneys are produced in some cases of scarlatina are not very evident. As, however, it occurs chiefly amongst the lower classes, who are so extremely negligent in the matter of cleanliness, there can be no doubt that the most serious exciting cause is the non-establishment of free perspiration after the disappearance of the rash. This non-performance of the cutaneous functions must induce renal congestion, whence the evils caused by inference with the duties of these important organs of depuration. The warm bath, with a large bran, or linseed-meal poultice to the loins, is generally sufficient to relieve the renal congestion occurring in these cases in children.

If due care were taken to restore the functions of the skin after scarlatina, by the use of warm baths and flannel clothing, the resulting dropsy would be very rare. Yet in Dr. Bird's opinion this is by no means to be regarded *per se* as the real cause of these effects; but rather that the want of a freely perspiring surface, by determining the

blood to the kidneys especially, places the patient in the most favourable condition for the development of the effects of the unexhausted poison of the pre-existing disease. To render this clearer, he lays down in an aphoristic form the facts recognized in connection with the development of the disease in question.]

1. The anasarca does not appear during the existence of the rash.

2. The sequelæ, which do not depend on local mischief about the throat, usually appear about the end of the first week after the recession of the rash, rarely before, and not often after this period.

3. The frequency of their occurrence is in the inverse ratio of the vividness of the rash.

4. The urine contains certain of the elements of the blood (albumen and red particles,) with a considerable number of large organic globules.

5. The blood contains some of the elements of urine, as proved by the existence of urea in it, as well as in the secretions derived from it.

6. Analogous effects, although looked for, have not been observed on the recession of other exanthems, as measles and small-pox; nor in cutaneous affections in which free perspiration must be checked, or greatly lessened, as in lepra, psoriasis, chronic eczema, &c.

Admitting that the foregoing propositions are fully borne out by past experience, we cannot fail to recognize the affection under consideration as something peculiar, and bearing a definite relation to the poison of scarlatina, and not as the result of a mere impaired state of the function of the skin.

There can scarcely be a question of the, at least, conventional accuracy of the old opinion, now lately revived, of scarlet fever being essentially a disease of the circulating fluid; that in fact the peculiar poison of scarlatina, when it affects an individual, plays the part of a ferment, deranges the healthy condition of the blood, acting as a poison as effectually as if directly injected in a palpable and visible form into the blood vessels. Hence scarlatina, like variola, rubeola, glanders, &c., is regarded as a zymotic affection. A person, then, who is inoculated, no matter in what way, with this septic poison, after a period of time, which has not been satisfactorily determined, becomes the subject of the well-known symptoms of scarlet fever. During this period of incubation there can be no question but that the effects of the poison are influencing the system at large, so that no tissue or secretion of the body can be said altogether to escape completely its malign influence. The result of this effect of the poison is a great determination of blood towards the cutaneous and mucous surface, shewn by the characteristic rash covering the former, and the injected erythimic state of the latter. Many of the glandular structures also partake of this congestion, as is generally shewn in the throat by the inflamed and swollen tonsils and sub-maxillary glands. If the exanthem be vivid, and its eruption copious, nothing occurring to check its full development, or arrest its course, the effects of the poison become, accidents apart, exhausted, desquamation of the cuticle occurs, and convalescence results. But if, on the other hand, some irregularity takes place in the normal development of the effects of the scarlatinal poison, and its elimination by the surface is prevented, the patient may apparently convalesce for a time satisfactorily; but the poison not being all excreted or destroyed, some of the recognized after-effects result. Even if the powers of the patient are sufficient to enable him to combat successfully the effects of this relic of the poison, a check given to the re-establishment of the cutaneous transpiration by too early an exposure of the influence of alterations of temperature will be sufficient to prevent the due excretion or decomposition of the remaining *materies morbi*, and one or other of the ailments before alluded to are ushered in.

[In what manner does the presumed relict of scarlatinal poison act in producing the peculiar after-effects of the disease? Granting the existence of an imperfectly exhausted *materies morbi* in the blood after the disappearance of the incompletely developed exanthem, attempts will be made to excrete this matter, under some form or other, by some of the various emunctories of the body. We cannot doubt that the skin is adequate to the task, since the after-effects are so extremely rare when a freely perspiring surface has been obtained soon after the recession of the rash, but when this means of excretion has been insufficient or stopped by cold or want of cleanliness, an attempt is made to get rid of the relict of the disease by some other outlet.]

From the researches of Wöhler and others, with which the profession is perfectly familiar, it seems demonstrable, that, as a general rule, all effete matters existing in solution in the animal fluids are excreted by the kidneys. Accordingly, a large supply of blood is sent to these organs, their capillaries become dilated and congestion occurs. The almost necessary result of this pathological condition of the kidneys is a double lesion of their function. An exudation of the albuminous elements of the blood occurs, and renders the urine coagulable, its tint being often darkened by an admixture of red particles; whilst, on the other hand, the kidneys cannot carry on their important depurating functions perfectly; they eliminate but imperfectly the nitrogenized effete elements of the blood, and hence one or more of the normal constituents of the urine are detectible by chemical analysis in the circulating mass. Contemporaneously with these lesions, more or less effusion into the loose sub-cutaneous cellular tissue, to a varying amount, generally but not necessarily occurs.

The train of effects, often of a grave character, following scarlatina, are almost all, I believe, really referrible to the retention of the nitrogenized elements of urine in the blood; a conclusion, the adoption of which is justified by the analogy existing between the disease under consideration and *Morbus Brightii*, in which the existence of effete nitrogenized matter in the blood is, at least in several phases, a necessary accompaniment. The recognisable sequelæ of scarlatina referrible to this category are characterized by the tendency to the setting up of serous inflammation, especially of the pericardium, pleura, and arachnoid. Cases of pericarditis often have been by no means very unfrequent among the children who had suffered from scarlet fever; and certainly a month has not passed without meeting with cases of heart disease referrible distinctly to pericarditis following attacks of scarlatina.

It may not be uninteresting to those less acquainted with chemical manipulation, to describe a simple and easy process for the detection of the urea in the blood and serous fluids, in the cases just alluded to. Allow the blood to coagulate, decant the serum, and agitate it violently with its own bulk of rectified spirit; a dense deposit of albumen occurs, and the mixture may be set aside for subsequent examination, or, if time permits, this may be preceded with immediately. For this purpose, throw the whole on a filter, and evaporate the filtered fluid slowly to a drachm or two; then add to it an equal bulk of dilute nitric acid of the pharmacopœia, and once more filter. The filtered fluid, collected in a watch-glass, may be slowly evaporated to a few drops, and, on cooling, feathers of nitrate of urea will form in the liquor. Should the crystallization be imperfect, the deposited nitrate may be re-dissolved in a few drops of water, the solution decanted, and once more slowly evaporated. By this simple process, requiring no apparatus beyond an evaporating dish, any one may satisfy himself of the existence of urea in serous fluids containing it. With ordinary care the evaporation may be performed on the hob of a parlour fire-place, especially if a piece of card-board is interposed between the evaporating dish and surface of the

hob, to prevent any accidental elevation of the temperature to too high a point.—*Guy's Hospital Reports*, April, 1845, p. 131.

ON RHEUMATISM.

By C. J. B. WILLIAMS, M.D.F.R.S., &c.

[Rheumatism is usually divided into acute and chronic; sthenic and asthenic are more appropriate terms. The crick in the neck produced by sitting in a draught is a kind of rheumatic affection, and the same may be said of lumbago and sciatica, which are neuralgic forms of the same complaint.]

The distinction between the forms of rheumatism is very easy, more particularly in chronic cases, in which the peculiar products of the inflammation are more confined to the specific parts that are affected. In the first place, there is the most acute and inflammatory kind—the acute diffused articular rheumatism—which affects all the joints, and is not confined to any particular structure. In acute rheumatism of the knee, you find the patella is floated up by the effusion under it, besides which there is a considerable enlargement with tenderness and swelling of the surrounding bursæ, and the skin may assume the appearance of common inflammation. This form resembles common inflammation, and is, consequently, more tractable. The second variety is the acute fibrous or fascial rheumatism, where the inflammation attacks chiefly the fibrous textures, the fascia between the muscles, the aponeuroses, the periosteum, and the fibrous coverings of the viscera, more particularly the pericardium. In the other form the pericardium is not affected. The endocardium is also affected. The seat of this inflammation is confined to the joints themselves; there is more or less pain and swelling in the joints, and also swelling between the joints in the fore-arms, the backs of the hands, and in the legs. There is a sort of diffused swelling over the limb affected, not simply a fluctuating swelling in the capsules and bursæ, but more diffused. This is one of the least tractable forms, and is less amenable to common antiphlogistics and requires specific treatment; depletion alone produces little benefit here. If the disease goes on long, it tends to produce the chronic form, together with muscular paralysis and atrophy. The third variety is the synovial or capsular rheumatism, affecting exclusively the capsules of the joints, and the synovial membrane. It is usually accompanied by great swelling, and distention of the capsules of the joints, particularly those of the knee joint. It is, like the other variety, intractable, and bears a close resemblance to gout. It occurs chiefly in cachectic and debilitated subjects, from an imperfect action of the kidneys. This is the form which becoming chronic, more particularly tends to produce the distortions of which I have been speaking. There are depositions in the joints, forming nodosities, creating permanent stiffness. In this form, too, it is that that peculiar deposit of lithate of soda has been found on the skin after perspiration. This affection closely resembles the chronic form of gout; it is said, too, sometimes to cause metastasis, but it affects the heart less than the other varieties. The fourth variety of rheumatism is the periostitic. Here there is pain, tenderness, puffiness, and swelling over some bony surface,—either over that of the cranium or the tibia. This is generally the result of syphilitic poison. Its tendency is to become chronic, and to produce nodes and bony deposits. It may also arise independently of syphilis. This form of rheumatism affects the head, producing obstinate headaches. It is not confined to the dura matter, but affects the interior of the head. It seems, too, to produce symptoms of a tetanic and convulsive character, closely resembling an attack of chorea. Another variety is the neuralgic, which is seated in the nerves, pro-

ducing severe pain. This rheumatic inflammation affects the sheath of the nerves. In lumbago, the inflammation affects the loins and the back, and by-and-bye the pain settles down into the course of the sciatic nerve, whence there may be severe pain and tenderness down to the leg and sometimes into the scrotum, which obviously arises from the rheumatic affection becoming localised in the sheath of the nerve. It is a form of rheumatism which is less traceable than the others, even with antiphlogistic means. This is another circumstance which tends to prove that the inflammation is dependent not on common causes, but that it is an inflammation of a particular kind, wandering in the system, and exciting inflammation in many parts, and exciting either acute or chronic symptoms in proportion to the intensity of the cause. There in fact seems to be something in the blood which ought to be excreted, an opinion which is confirmed by the peculiar efficacy of certain medicines. Now, taking this view, you will be able to understand what is called metastasis, or the translation of rheumatism; not a translation of the whole disease, but of the morbid matter in the system, operating sometimes on one part, and sometimes on another. This is not the same thing as the disease being translated from one part to another, in which case there would be no simultaneous appearance of the disease in various parts, which we find to occur when the disease is very active. All these inflammations are the results of the operation of the same cause, the *materies morbi*, or morbid matter diffused through the system, simultaneously affecting various parts. Now there is one peculiar rheumatic affection of the heart, that excites more permanent suffering in that organ than any other cause. The heart is continually in motion, never at rest, the inflammation seeming to be completely lodged in it. When the joints are still, the heart is working tumultuously, owing, in connexion with the fever, perhaps to the exciting quality of the blood itself. This is one reason why the heart is so liable to suffer during the attacks of acute rheumatism. I have found that of all cases of acute rheumatism which I have closely examined within the last eight years, the heart has been affected in three-fourths of the number.

The treatment of rheumatism will vary according to its kind. In the sthenic acute cases, particularly the diffused articular, also in the fascial and synovial varieties, copious blood-letting in the very early stage will sometimes arrest the disease, and mild purgatives and other evacuants will complete the cure. But, if the disease has lasted two or three days—especially if it has been preceded by much general disorder—then there is no probability of mere depletion curing the disease; indeed there is some risk arising from its use at this period, or under the above circumstances. Depletion subdues the common inflammation, but it does not remove the cause of the disease from the system. It converts the acute or sthenic into the chronic form of rheumatism. Very often free blood-letting in rheumatism causes metastasis to the heart. The same objection may be applied to local blood-letting from rheumatic limbs particularly in the acute fibrous form. It is much more favourable if the rheumatism remains in the limbs without affecting any other part of the body, such as the interior of the heart. Local treatment never will remove the constitutional cause, nor will blood-letting do so. Blood-letting reduces the system to such a state that other medicines can be brought into operation, and in that way only is it efficacious. It should be used at the first onset without carrying it to an extreme extent. The chief object to be gained by it is to reduce the increased action. The average quantity of blood which it is advisable to draw at a single blood-letting is from 16 to 20 ounces. If the heart is attacked, then apply local treatment. Now what are the medicines which can attack the constitutional causes of rheumatism? There are several that seem to have this power.

Mercury combined with opium seems to have some efficacy in this way, and though it is more of an antiphlogistic remedy, it is yet an important one, and should always be employed when the head has become implicated. In the acute inflammatory form, a large dose of calomel once, twice, or three times a day should be given; the first dose not being combined with opium in order to act as a purgative; the proportion of calomel with opium, in the subsequent doses must vary according to the symptoms. If the inflammatory symptoms increase, it should be combined with antimony, and if the nervous symptoms predominate, opium and morphia should be combined. Dr. Mead who has written on this subject, discredits mercury, but Dr. Chambers is a great advocate of it. It is not so efficacious alone as in combination with other means, and the most important of these is colchicum, which is the great anti-rheumatic as well as the great arthritic or gout remedy. It is of great consequence to use colchicum from the beginning; not that it takes effect in every acute case, but it begins to saturate the system, which requires that there should be a certain quantity of the remedy in it, or, at least, that the patient should have taken it for some time before it begins to produce its specific effect. The best form to give it in is that of the wine: the doses varying from 20 minims to half a drachm, or even more, three times a day, combined with an alkali. Its effect is to increase the quantity of lithic acid in the urine in a very signal manner, and, as this takes place, the urine increases in quantity and specific gravity, and in proportion to these effects the pains become reduced and subside. There are other remedies that seem to produce the same effect, though in a less degree. These are, iodide of potassium and guaiacum; they operate much in the same way as colchicum, but with much less certainty. Mercury should be administered with colchicum until the gums are affected, or diarrhoea is produced. The object is not to produce diarrhoea if possible, for that is far from being of advantage in the treatment of rheumatism, and I have cured some cases of the disease without sickness being produced. When the rheumatism is severe, diminish the quantity of colchicum, and join opium with it. In the synovial form, mercurial treatment is rarely necessary at all, but the colchicum treatment is the great remedy. The other forms of rheumatism are of the lower kind. Lumbago, which is of an acute character, may sometimes require cupping at the loins, particularly if the kidneys are much irritated, but, generally speaking, colchicum is the proper remedy for it. Sciatica, which often originates from lumbago, may require cupping over the sciatic nerve, but that will yield to colchicum, given in increased doses, and continued for a long time. In the sthenic forms of rheumatism, whether acute or chronic, blood-letting and purgatives or antimony are required, and colchicum is to be given. Mercury may be sometimes necessary, particularly in the fascial form. It is in this form that guaiacum combined with ammonia is efficacious; and iodide of potassium is another effectual remedy here. Tonics are also found useful in this form. Vapour, hot air, and hot baths, are highly serviceable in some of the other forms of rheumatism. The use of the hot bath in acute rheumatism is a most pernicious practice, and I have known many instances in which it has been attended with the most disastrous results. Stimulating embrocations are of great use, particularly those combined with iodide of potassium. In cases where the inflammation is localized, local depletion, blistering, embrocations, and the shampooing bath are necessary. In fascial rheumatism, strychnia applied externally is of use, and some people give it internally. In periosteal rheumatism, great benefit is derived from iodide of potassium as well as colchicum. Sciatica often takes on the chronic form, and it may then be relieved by turpentine frictions and acupuncture.—*Medical Times, March 29, 1845, p. 543.*

FORENSIC MEDICINE.

DR. TAYLOR'S REPORT ON THE PROGRESS OF TOXICOLOGY.

(Concluded from page 221.)

A remarkable trial has lately taken place at Chambéry, in which the accused was charged with the murder of the deceased by prussic acid; while, in the defence, it was alleged, that death was owing to apoplexy and not to the poison, (*Annales d'Hygiène*, 1843, p. 103.) The case presents numerous points of interest in relation to medico-legal toxicology; the symptoms and post-mortem appearances met with in apoplexy, as contrasted with those produced by prussic acid; the value of evidence derived from symptoms in cases of poisoning, as well as that obtainable from the period at which death ensues after the supposed administration; the extraordinary chemical errors that are occasionally made in the analysis of poisons, the witnesses in this case imagining that the presence of poison might be inferred from a series of very doubtful or even negative results. The person charged with the crime was very properly acquitted; for there was no medical proof whatever that poison had been the cause of death, while there was direct evidence of death from apoplexy, by the discovery of a large effusion of coagulated blood on the brain. He appears to have owed his acquittal principally to the care bestowed by Orfila, on the examination of the facts of the case.

Oil of bitter almonds. One case of poisoning by this substance has lately occurred, and is reported by Mr. Smith of Clifton, (*Lancet*, June, 1844.) A girl, between 8 and 9 years of age, swallowed about a teaspoonful of a mixture sold by druggists as "ratfia," composed of one part of the essential oil of bitter almonds to seven parts of spirit. The quantity swallowed by the patient was equivalent to about seven drops of the essential oil. With this datum it will be interesting to consider the effects produced by so small a dose. When seen immediately after the accident, there was complete insensibility; the eyelids were closed, but the eyes were brilliant and glassy, without any mental expression; the pupils dilated; no pulse at the wrist; the carotids beating fully and quickly; relaxation of the muscles of the extremities, but the lower jaw was clenched in rigid spasm. Cold affusion with stimulants, stimulating frictions and emetics, were employed. Vomiting was induced, and the ejecta had a strong smell of prussic acid. In about twenty minutes the pulse returned,—the child opened her eyes, and was able to answer questions.

The quantity of prussic acid contained in the oil, and to which its poisonous properties are due, is said to vary from 8 to 14 per cent. The above case shows that in a small dose it may give rise to very alarming symptoms; and it is probable, that but for the active and prompt treatment adopted, this child would have died.

Cyanide of potassium. This salt has of late years caused death in several instances where it has been taken by mistake or in improper doses. A gentleman was killed in France, in 1843, by taking twelve grains of the salt, in consequence of some error in the medical prescription. The physician who ordered the medicine, was tried, fined and imprisoned. (*Lancet*, January, 1843.) Another case occurred at Breslau, in which a man, aged thirty, died in a quarter of an hour after taking a dose of a mixture which had been prescribed for him by his medical attendant, under all the symptoms of poisoning by prussic acid. (*Henke's Zeitschrift der S. A.*, 1843, p. 7.) The mistake here arose from those unfortunate changes periodically made in the nomenclature of pharmacopœial compounds, which constitute a matter of regret among ourselves; for such a practice takes away all certainty from the art of prescribing, and leaves the life of the patient and the character of the practitioner in the hands of a druggist, who may be ignorant of the properties of the medicine which he dispenses.

It appears that until lately the yellow ferrocyanate of potash was known in the Prussian Pharmacopœia under the short name of "kali hydrocyanicum," just as it was formerly called, in English, prussiate of potash, and is now termed ferrocyanide of potassium—an objectionable alteration from the term ferrocyanate, because many dispensing druggists might confound the ferrocyanide with the cyanide, and dispense the poison for the innocent substance. Of late years, in the Prussian Pharmacopœia, the cyanide of potassium has received the name of "cyanatum

kalicum," or, improperly, "kali hydrocyanicum." *Fifteen grains* of "kali hydrocyanicum," in a dose, were prescribed by the physician for his patient, he meaning thereby the ferrocyanate of potash. Instead of this, however, cyanide of potassium was sent, and the patient died in a quarter of an hour. The physician adopted and employed the chemical name which was probably current at the time that he studied his profession. The party who dispensed the medicine was undoubtedly to blame; for it appears that he entertained some doubt about the largeness of the dose, and he ought to have known that a dose of such a compound could not be taken by a human being without certainly destroying life. The energy of the cyanide of potassium as a poison depends, in some measure, on its mode of preparation. Some specimens are so impure as to consist almost entirely of carbonate of potash, from which it may be separated by its ready solubility in alcohol. (See *Annales d'Hygiène*, 1843, p. 404, in which this subject is fully investigated by Orfila.) An opinion formerly prevailed, that the poisonous properties of the salt were destroyed under two circumstances: 1, by exposure to air, in which case it is transformed to carbonate of potash; and, 2, by its being heated, in solution, to the boiling point. In neither case, however, does the salt easily lose its poisonous properties. Orfila found that some which had deliquesced, by exposure to air for a fortnight, still acted as a poison; and the conversion of the salt, at 212°, into ammonia and formate of potash takes place so slowly, under the most favourable circumstances, as not to interfere with this poisonous action. This substance does not therefore become innocuous, as it was formerly alleged, by solution in hot water. I have found by experiment that the ebullition of a solution, continued for a quarter of an hour, produced no sensible quantity of formate of potash.

Accidents such as those above referred to often give rise to charges of malpraxis. A case occurred some years since on the continent, in which a physician prescribed three grains of the "aurias hydrargyri" for a child. Calomel was then known by the termination "dulcis," and corrosive sublimate by the termination "corrosivus." The dispenser sent corrosive sublimate, and the dose killed the child. The physician was prosecuted for not having been more precise in his prescription; but it is fair to inquire whether a person who would in such a case send three grains of corrosive sublimate, to be taken by a child, was qualified for the dispensing of medicines under any circumstances whatever. Owing to the numerous changes that have taken place in our own Pharmacopœia, it is somewhat surprising that accidents have not occurred. Corrosive sublimate now differs from calomel merely in the prefix "bi," which might be in some cases overlooked. The impolicy of this change is apparent in the fact, that, on a new edition of the Pharmacopœia, if this system of adaptation to ephemeral chemical theories be adhered to, corrosive sublimate will become "chloride of mercury"—the name now attached to calomel; and this latter substance will become a "dichloride." It is the opinion of some distinguished chemists, that what is commonly called peroxide, is a protoxide of mercury, and the protoxide is a suboxide. All will agree that, for the safety of life, the names of medicines should be certain and unchangeable, and not vary with the fluctuating doctrines of the day; at any rate, it is a most serious result when the name attached to an innocent medicine at one time, should become applied to a powerful poison at another. Among the late "probability theories," as Berzelius terms them, which have emanated from the Giessen school, is one by which, if adopted, the present system of chemical and with it the pharmacopœial nomenclature will be completely overturned. Thus, an entirely new view is taken of the constitution of salts; and it is said that, instead of sulphate of potash being formed of an acid united to an alkaline base, it is the result of a union between a compound radical, formed of sulphuric acid and oxygen with the metal potassium. Pharmacy should be entirely independent of such hypothetical views; and all changes in the names of compounds should be made only for some very strong necessity, and with the greatest caution. It cannot be supposed that every practitioner throughout the empire should have the time, even if he had the inclination, to make himself master of the various speculations which are continually broached by chemists.

NARCOTICO-IRRITANT POISONS.

Cocculus indicus. Some researches have been recently made by M. Chevallier on the effects of this powerful poison. (*Annales d'Hygiène*, 1843, p. 339.) It appears that it has been the prac-

lice, in some parts of France, to poison fish by a mixture of this substance with crumbs of bread, and sell the fish for food; and it is stated that, in many instances, such fish were eaten without any ill effects resulting. This, however, was a matter of accident, and depended on the quantity of drug used; when this quantity was moderately large, the fish acted like a poison on animals. It would appear, from the observations of M. Goupil, that it is only the kernel of the berry which is poisonous, owing to the presence of picrotoxine,—that it is narcotico-irritant in its effects, and that the fish destroyed by it exert a similarly poisonous action when eaten. The woody shell of the berry is not poisonous—it merely operates as an emetic.

It appears that, with respect to this pernicious drug, the French system of legislation is like our own. There is a heavy penalty on the sale of it for certain purposes, but the free importation of it is allowed. The large quantities which are said to be openly and secretly imported into this country, can be applied to no lawful purpose; for the substance is utterly useless, both in medicine and the arts. There is no doubt that it is employed for the extensive adulteration of beer. The proper remedy would be to exclude it altogether; for it is absurd to attempt to prohibit its sale by a penalty, when its introduction has been once permitted.

Cytisus laburnum. The existence of a new and powerful narcotico-irritant poison has been lately announced by Dr. Christison, in the bark of the common laburnum tree. (*Edin. Med. and Surg. Journ.*, Oct. 1843.) It is remarkable that, considering how widely this tree is diffused, and how accessible it is as a poison, as well as the fact that its noxious properties have been known for some time to the vulgar—at least in certain parts of the kingdom,—it has not before received any attention from toxicologists.

The case reported by Dr. Christison came to trial at the Inner-vein circuit last year. A youth, with the intention merely of producing vomiting in one of his fellow-servants, a female, put some dry laburnum-bark into the broth which was being prepared for their dinner. The cook, who remarked a "strong peculiar taste" in the broth, soon became very ill, and in five minutes was attacked with violent vomiting. The account of the symptoms is imperfect; for the cause of them was not even suspected until six months afterwards. The vomiting continued thirty-six hours; was accompanied by shivering, pain in the abdomen, especially in the stomach, and great feckleness, with severe purging. These symptoms continued, more or less, for a period of eight months; and she fell off in flesh and strength. At this period she was seen by a physician, who had been called on by the law-authorities to investigate the case. She was then suffering from gastro-intestinal irritation, vomiting after food, pain in the abdomen—increased by pressure, diarrhoea, tenesmus, and bloody stools, with other serious symptoms. The medical opinion was, that she was then in a highly dangerous state. The woman did not eventually recover until the following April. There was no doubt, from the investigation made by Dr. Ross and Dr. Christison, that her protracted illness was really due to the effects of the laburnum-bark.

Some experiments were then made on the action of the poison on animals. A teaspoonful of the powder of dry laburnum-bark was administered to a cat. Soon afterwards it writhed, apparently in great pain; in a short time it vomited violently, and, although languid and dejected for the rest of the day, it quickly recovered. Sixty-nine grains of the same powder were given to a dog. In ten minutes it whined and moaned, vomited violently, and soon got well. On a second occasion, twenty grains were found to act as a powerful emetic upon the animal. An ounce of the infusion of laburnum-bark, containing the active matter of sixty-two grains, was introduced by a catheter into the stomach of a full-grown rabbit. In ten minutes, the animal looked quickly from one side to the other, twitched back its head twice or thrice, and instantly fell on its side in violent tetanic convulsions, with alternating emprosthotonos, and episthotonos so energetic, that its body bounded with great force upon the side, up and down the room. Suddenly, however, all movement ceased, respiration was at an end, the whole of the muscles became quite flaccid, no sign of sensation could be elicited, and the animal died within two minutes and a half after the poison was injected into the stomach. The body was opened in two minutes more, and the heart was found gorged, but contracting with some force. The stomach was filled with green pulp, soaked with the infusion. No morbid appearance was visible anywhere. In repeating this experiment,

one rabbit died in half an hour, another in three quarters of an hour after small doses of the infusion were injected into the stomach; and a third rabbit speedily died, after eating greens merely impregnated with the infusion. In all these instances, convulsions were the leading symptoms produced. The same effects are popularly ascribed to the leaves, young pods, and seeds of the tree; but no experiments were performed with these.

The facts here detailed show that laburnum-bark is a most energetic poison—as powerful, even, as nuxvomica. There are no means of detecting the nature of this poison, especially when administered in powder or infusion; or when, as in this criminal case, a decoction of the bark is given in food. The only plan for determining the deleterious properties of the substance, would be by exhibiting a portion to animals. As Dr. Christison remarks, these facts are of considerable importance; and as they relate to a substance so common, and so easily obtained by every one, they ought to be more generally known to the profession than they are at present.

Enanthe crocata. Another instance has occurred lately of the loss of life among the convicts at Woolwich, by the eating of the leaves and roots of this powerful indigenous vegetable poison. The facts have been communicated to the *Medical Gazette*, (May, 1844,) by Mr. Bossey. It appears that a party of convicts ate of the root and leaves of the plant while engaged at work. In about twenty minutes one man, without any apparent warning, fell down in strong convulsions, which soon ceased, but left a wild expression on his countenance. Soon afterwards, as many as nine fell into a state of convulsions and insensibility. The face of the man first seized became bloated and livid; there was a sanguineous foam about the mouth and nostrils; the breathing was stertorous and convulsive; there was great prostration of strength, and insensibility; he died in five minutes. A second died, under similar symptoms, in a quarter of an hour, although the stomach-pump was used, and some leaves were extracted with the fluids. A third, who had assisted in carrying the two former, was himself seized with convulsions, and died in about an hour; and soon after him, a fourth died, in spite of the most energetic remedial treatment, by cold affusion, emetics, stimulants, stimulating frictions, and the use of the stomach-pump. Two other cases proved fatal, the one in nine days, and the other in eleven; and in these two cases, there was irritation of the alimentary canal. On inspecting the bodies of those who died quickly, there was congestion of the cerebral vessels, and in one instance, a layer of extravasated blood was found beneath the pia mater. In the first case, which proved most quickly fatal, the cerebral vessels were not congested. The pharynx and œsophagus had a white appearance, contained some mucus and portions of the root. The lining membrane of the trachea and bronchi was intensely injected with dark blood. The lungs were gorged with fluid blood. The blood in the heart was very black and fluid. The stomach and intestines were externally of a pink colour; the cavity of the stomach was lined with a thick viscid mucus, containing portions of the root. The mucous membrane was much corrugated, and the follicles were particularly enlarged. Similar appearances were met with in all. In the two protracted cases, the mucous membrane of the stomach and bowels was softened and thickened. It had a pink colour externally, but no red appearance internally. The vessels of the brain were congested. In the others who partook of the roots, the symptoms were not so urgent. Under the free use of purgatives, considerable quantities of the root were discharged, and in a few days the men recovered. By a similar accident in 1834, the lives of four men were lost from the action of this vegetable poison.

There is no doubt that the enanthe is one of the most powerful of the indigenous narcotico-irritant poisons. It destroys life with even greater rapidity than arsenic, for it here proved fatal to a strong healthy man in less than one hour. Chemists have not yet ascertained on what principle its active properties depend, but they appear to reside chiefly in the root.

Digitalis Purpurea. The following recent case of poisoning by this plant is reported by Mr. Wilson of Leeds, (*Med. Gaz.*, Aug. 1844.) A healthy robust young man, affected with sore throat, was advised to take "throatwort tea." Having filled a quart pitcher with fresh leaves of the digitalis purpurea, he poured upon them as much boiling water as the pitcher would hold. Of this strong infusion he took a teaspoonful on going to bed which caused him to sleep soundly. In the morning he took a second cupful (the infusion being then much stronger), and went to his

employment. He soon felt dizzy and heavy, began to stagger, lost his consciousness, and at length fell down in a state of syncope. On being conveyed home, he vomited severely and complained of extreme pain in the abdomen. When visited he was conscious, complained of great pain in his head,—the pupils were dilated, and the surface was cold, pallid, and covered with a copious perspiration. The pulse was low, about 40 in the minute,—three or four feeble pulsations being succeeded by a complete intermission of several seconds; and each stroke, though weak, was given with a peculiar “explosive shock.” There was still great pain in the abdomen, with incessant and violent vomiting, no diarrhoea,—suppression of urine, and an abundant flow of saliva. Brandy and ammonia with warmth were employed, and after reaction had commenced,—purgatives were administered. The man slowly recovered, but the pulse presented its peculiar beat and weakness for several days; and during this time, the man could not bear the upright position.

The symptoms in this case were like those which have been usually observed. It establishes beyond question that salivation may be produced by this plant.

Alcohol. A singular instance is referred to in a late number of the *Lancet* (April, 1844), in which a child aged 2 years was thrown into an anepietic stupor, from the alcoholic vapour of eau de Cologne. There is no doubt that the long-continued respiration of the vapour of alcohol or ether might prove dangerous to a child.

A NEW METHOD OF PREPARING MERCURIAL OINTMENT.—The irritation of the skin so frequently produced by blue ointment, prepared in the old way, led Orosi to the idea of using precipitated metallic mercury with fresh lard. The reduction of the salts of mercury to the metallic state, is, as is well known, effected by phosphorous acid, or protochloride of tin; the latter of which is employed by Orosi. He dissolves one pound of corrosive sublimate in a sufficient quantity of boiling water, and mixes an excess of protochloride of tin, with an addition of muriatic acid, with the solution. The mixture is now shaken at a moderate temperature for a short time, and the finely divided grey mercury is allowed to settle. When the fluid is poured off, the precipitate should be well washed with warm water, dried between bibulous paper, and then mixed with the prescribed quantity of fresh lard. The fine state of division of the precipitated mercury renders this preparation of the ointment very expeditious. The only difficulty encountered in this method is the readiness with which the precipitated grey mercury forms metallic globules, especially if the precipitate be allowed to stand too long, and dry after pouring off the fluid. This union of the globules may, however, be prevented, by covering the interior of the vessel in which the mercury is precipitated with fat. Ointment prepared on Orosi's plan exhibits no globules of metal under the lens, and can at the most only contain a trace of oxide of tin, if sufficient muriatic acid be not employed in the preparation, or the precipitate be inadequately washed. Ointment prepared in this way is certainly more expensive, but is free from all rancidity, and does not require much rubbing down.—*Braithwaite's Retrospect.*

ON THE PURIFICATION OF HONEY.—By *M. Veling.*—The white of one egg is beaten up with five pounds of honey till it froths; as much water is then added as is sufficient to form the consistence of a thinnish honey; it is then mixed, and boiled until the albumen can be removed with the froth; it is then poured into an upright vessel, two or three inches above the bottom of which a cock is inserted; it is well covered, and set aside in a cellar for six or eight weeks. The impurities, which otherwise stop up the filter, or the finer portions of which pass through, become coagulated in the vessel, and collect at the bottom and on the sides, and the honey can be drawn off clear by the cock.—*Archive der Pharm.*, xl. p. 155.

ADULTERATION OF JALAP ROOT.—Sometimes brown, ragged, pear-shaped fragments, are found mixed with the true jalap root, which resemble it very much externally, but are not so heavy, and are either soft and flexible, or readily broken when they have been roasted. In many pieces, fibres may be distinctly perceived, and from this, as also from their sweet taste, they would seem to be dried fruit which had been immersed in tincture of jalap, and have thus been rendered somewhat acrid to the taste. Similar adulterations have also been observed in articles sent under the name of jalap root from Bremen.—*Archiv. der Pharm.*, *M. Ingenh.*

ON THE DETECTION OF PRUSSIC ACID IN CASES OF POISONING.—By *M. Witting.*—The method recommended by the author in suspected cases of poisoning by prussic acid, is to mix the mass with one-sixth of its bulk of alcohol, and to distil off one-fourth. If it contains prussic acid, the distilled product generally evolves its peculiar smell. To this product a little caustic potash is added, and then a mixed acid solution of protochloride and perchloride of iron, when prussian blue is formed. If it be suspected that the poisoning was effected with cyanide of potassium, cyanide of zinc, &c., some hydrochloric acid should be added along with the alcohol previous to distillation. (*Berzelius's Jahresbericht*, xxiv. p. 269.)—*From the Chemical Gazette.*

ADULTERATION OF SAFFRON.—J. Muller recommends concentrated sulphuric acid as the most certain test for saffron, for it immediately turns the colour of pure saffron to indigo blue, (it, however, soon changes to dark red and brown.) The leaves of *crocus vernus*, which form the most frequent adulteration, are coloured of a dark green by sulphuric acid.—*Archive der Pharm.*

TOOTH POWDERS.—Take powder of red bark, bole armeniac, sifted, of each one ounce; powder of cinnamon, half an ounce; bicarbonate of soda, half an ounce; oil of cinnamon, two or three drops,—mix. This is an excellent tooth-powder, unobjectionable in every respect. Carbonate of magnesia may be substituted for the bicarbonate of soda, or precipitated carbonate of lime; but the solubility of the bicarbonate of soda renders it preferable.—*Lancet.*

THE

British American Journal.

MONTREAL, DECEMBER 15, 1845.

THE PROVINCIAL MEDICAL ASSOCIATION AND THE MEDICAL SOCIETIES.

In our last number was contained the Report of the Medical Society of Quebec, with its proceedings on the Report of the Delegates of the Medico-Chirurgical Society of this city, relating to the events connected with the late attempt to form a Provincial Medical Association in this Province. We have until now purposely refrained from any observations upon it; and while we cannot but admire it for the conciliatory spirit which it manifests, and its desire to smooth down the asperities which led to and have succeeded a rupture, which every friend to the medical profession must deplore, we yet cannot avoid noticing a few of its statements; and we feel that we are able to do this without laying ourselves open to a charge of favouritism or bias, inasmuch as with the proceedings of the Society of this city relating to this matter, from their commencement until the day in which its delegates were named, we have had nothing whatever to do. We purpose not to express the slightest opinion on the treatment which the Medico-Chirurgical society of this city received, through its delegates, at the attempted convention. With this we intend to have nothing to do, as the society has already expressed itself on the matter, but we do purpose to show, and this too from official sources, and official correspondence between the secretaries of the different medical societies of the province concerned, that, in the first place, the convention was originally intended to

have been *exclusively* confined to "the medical societies," and in the second, that there were no grounds for any "misunderstanding in the mode of calling the convention."

At a meeting of the Medico-Chirurgical Society of this city, held on the 25th Jan., 1845, we find recorded the following minute, in reference to previous correspondence held on the subject:—"The secretary (Dr Badgley) then read a letter from Dr. G. R. Grasett, secretary of the Toronto Medico-Chirurgical Society, offering their hearty co-operation in carrying out those measures which may tend to advantage either the mutual interests of those societies respectively, or of the medical profession of Canada generally." The following resolutions were then moved by Dr. Badgley, seconded by Dr. Fraser, and carried unanimously:—"That this society accept with pleasure the proffered co-operation of the Toronto Medico-Chirurgical Society, in carrying out those measures, originated by them, for the advancement of medical science, the elevation of medical character, and the establishment of union and cordial feeling among the members of the profession, the tendency of which cannot but prove of paramount importance to the profession and the public," and 2nd—"That the secretary put himself in communication with the secretary of the Quebec Medical Society with a view to establish a friendly correspondence with that society on the subject." In these two resolutions, then, of this society, with the correspondence of the Toronto society, upon which they are based, we find the germ gently developing itself, which, when ripened, was to have brought forth such valued fruits. The connexion with the Quebec society was now commenced, and its cheerful acquiescence in the scheme was shortly afterwards announced through its secretary, an extract of whose letter we shall shortly subjoin.

At a meeting held on the 8th of February, we find the following minute:—"Dr. Badgley submitted a series of resolutions for the adoption of the society, having for their object the formation of a general association of the members of the medical profession in the Province;" the consideration of which was postponed to the 8th of March, which was appointed a day of special meeting for the purpose. These resolutions were as follow, the italics being our own:—

I. Resolved:—That, with a view to carry out the objects originally contemplated in establishing this Society, and that the Members of the profession generally, scattered through this extensive Province, may feel that there exists a centre round which they can rally, *It be proposed to the Toronto Medico-Chirurgical Society, and the Quebec Medical Society, that a general Association be at once formed, under the name of "The Medical Association of Canada," and that the Members of the existing Societies, and of all such other Societies as shall hereafter be formed for the same purposes, be considered de facto Members.*

II. Resolved:—That the objects of this General Association shall be, the advancement of Medical Science in the

most extended sense of the term, but especially, the acquisition of statistical information regarding this country, as tending to settle the mean duration of life, under the peculiarities of climate, geographical position, geological structure, and atmospherical influences, the protection of the interests of the qualified and licensed practitioners against the inroads and usurpations of the unlicensed, the establishment of that union and good feeling among the members of the profession, which should characterize men engaged in the same pursuits, and animated by the same desire to see their profession in Canada occupy its merited position, and the formation of a fund for the relief of incapacitated or decayed, but deserving members, their widows and orphans.

III. Resolved:—That the Association shall meet in each successive year, at a city or town in Eastern or Western Canada; that the Members of the different branch Societies who shall be present at the annual meeting, shall represent the societies to which they belong respectively; that members of the profession not belonging to such branch Societies shall be admitted into the Association by ballot, on presentation of the degree diploma, or license under which they are practising; and that the transactions of the Association be yearly published, under the supervision of the respective Committees who have conducted the investigations to which the several papers refer, and of a general Committee of Management.

IV. Resolved:—That the annual subscriptions be devoted to meeting the necessary expenses attendant on the publication of their transactions, and for the ordinary business of the Society, and to offering prizes for the best communications on subjects of interest, to be determined upon at the annual meetings.

V. Resolved:—That Members of the profession not being already Members of the existing Societies, or of any other Branch or District Societies, to be hereafter formed, be required to pay, in addition to their annual subscription, an entrance fee: but that a strong recommendation be made for the establishment of such District Societies, with a view to their general amalgamation.

Finally, at the special meeting held on the 8th March, Dr. Crawford in the chair, after a lengthened conversation on the "suggestions," conveyed under the name of "resolutions," just recorded, and which had been submitted to the meeting, it was moved by Dr. Nelson, seconded by Dr. Bowie, and resolved unanimously:—"That, in the opinion of this society, it is expedient that a general association be formed among the members of the profession in this province, with a view to the advancement of medical science, and the protection of the interests of members of the profession;—and 2nd, moved by Dr. Arnoldi, seconded by Dr. Trestler, it was resolved—"That the secretary be instructed to transmit a copy of the above resolutions, and of the suggestions submitted to this meeting, as indicative of the objects which this society deems essential, or worthy of consideration in the formation of such an association, to the secretaries of the Toronto Medico-Chirurgical Society and the Quebec Medical Society, with a request that they be submitted to those societies for their consideration and adoption." We think now, that whatever previous suggestions had been thrown out as to the propriety of an association of the kind, for any or all the measures contemplated, the

society of this city may with the utmost fairness claim the merit of having taken the first decided step in the matter. This will be further apparent when we consider the official correspondence which originated from the above proceedings, extracts from which we purpose now to give.

In a letter, dated Jan. 10, 1845, Dr. Grasett, secretary to the Toronto Medico-Chirurgical Society, "desires to express the willingness they (the Toronto Medico-Chirurgical Society) entertain to co-operate with the Montreal Medico-Chirurgical Society in any measure which may be regarded as tending to promote the mutual interests of these institutions, or the interests generally of the medical profession in this country.

In a letter, dated April 12, 1845, Dr. Nault secretary to the Quebec medical society, after a meeting, held on the 7th, thus replies to a letter submitted by him, from Dr. Badgley, to that Society—"J'ai été chargé de vous prier de témoigner à la Société Médico Chirurgicale de Montréal, le plaisir et l'impressionnement avec lesquels la Société de Médecine de Quebec accepte l'alliance qu'elle (the Montreal Medico Chirurgical Society) lui propose. Fondée comme celles de Montréal et de Toronto dans le but de former un lien d'union et de fraternité entre ses Members, de veiller à leur protection mutuelles, et de travailler de concert au progrès des Sciences Médicales, la Société de Médecine de Quebec sera aussi fière et heureuse, de donner son appui et sa co-opération à toutes les mesures qui pourront être prises pour améliorer et relever l'état de la Profession Médicale en Canada. Comme rien ne pourrait contribuer plus promptement à amener cette fin si désirable qu'une association comme celle que vous proposez ENTRE LES DIFFÉRENTES SOCIÉTÉS MÉDICALES DE LA PROVINCE, j'ai raison de vous dire que la Société de Quebec est prêt à joindre ses soins, et à vous assurer en particulier de la bonne volonté de CHACUNE SES MEMBRES de vous seconder de tous leurs efforts, &c."

Such then were the two responses from the sister societies of the province in regard to their co-operation. But we proceed, and to the subsequent letter we request particular attention. The resolutions adopted at the special meeting of the 8th March, having been duly transmitted to the secretaries of the Quebec and Toronto medical societies, the following reply was returned from the first mentioned, which we give entire.

{ QUEBEC MEDICAL SOCIETY,
May 12, 1845.

SIR,—I have had the honour to submit to our Medical Society, at the last monthly meeting, your letter of the 7th April last, containing a series of resolutions, having for their object, the formation of a General Association of the Members of the Medical Profession in Canada.

I have much pleasure in informing you, that these reso-

lutions, after having been taken into consideration, were unanimously adopted, except the second, which was amended by the following: "That it is expedient to establish a general and approved Tariff of fees, in which the system of attendance on families, by contract, shall be included.

I have the honour to be, Sir, your obedient servant,

J. Z. NAULT, Sec. Q. M. S.

F. Badgley, Esq., M. D. }
Sec. M. M. C. S. }

From the second, or the Toronto Medical Society, an answer was also returned, signifying an acquiescence in "all its leading particulars."

When therefore we consider, that according to the first suggestion or resolution entertained at the special meeting of the Montreal Medico-Chirurgical Society, held on the 8th of March, that "the members of the existing Societies, and "of all such other Societies as shall hereafter be formed for the same purposes," shall constitute "the general association," "that members of the profession, not belonging to branch societies, shall be admitted into the Association by Ballot," and when we further consider that the Quebec Medical Society "unanimously" adopted the very resolutions in which these formative elements of the association, (if we may use the term), were alone recognized, we ask if that Society did not recognise the principle that the Association, intended to have been formed, should not have been, at least in the first place, exclusively confined to the "MEDICAL SOCIETIES?" It appears to us that this is an inference clear and unavoidable from the premises laid down; and we may now not unfairly, nor indeed unreasonably, demand how the Medical Society of Quebec could, consistently with its obligations to the Medico-Chirurgical Society of this city, contained in its expressions of concurrence and co-operation, depart not only from the spirit, but the letter of its contract, and summon a meeting of the Profession of its district, to do what?—to appoint delegates to a meeting, from which by a previously deliberately expressed resolution, they had determined that none but members of "the existing Medical Societies," or "such others as might have been formed for the same purpose," should be present. We thus clearly, in the first place, trace the unfortunate result of the Convention to the error of the Quebec Medical Society, in calling a district meeting of the Profession of Quebec, for the nomination of Delegates to a convention, at which, unless that district meeting had first constituted itself a District Society, its Delegates had, we maintain, no right to sit; and in the second place, to the district meeting of the Profession of this part of Canada East, for the purpose of nominating Delegates to the same convention, at which, they also, for the same reason, had no right to be present. The same observation applies to the Delegates from the District

of Three Rivers; but Dr. Hodder, while he represented the Profession of the Districts of Niagara and Toronto, "represented also their Medical Societies, which in both cases were 'District Societies,'" a fact which the Medical Society of Quebec silently passes over.

We conceive that the position assumed by the Medico-Chirurgical Society of this city, in refusing to sanction a meeting of the Profession of this District, for the nomination of Delegates to the convention, was perfectly proper, and it requires but little calm reflection, to determine its correctness, and a less amount of candour to admit it. In this position, minds only, accustomed to view things through the distorting medium of their own obliquity, can trace anything like intended or studied offence to the mass of the Profession. There is nothing in its proceedings to warrant, or give the slightest countenance to an assumption of the kind, but on the contrary, anticipating difficulties, it did every thing in its power to avert them, (see page 167), and we feel assured, its efforts would have been crowned with success, had not the scheme of changing the *character* of the convention, from one of "societies," to one of "districts," and thus excluding the Medico-Chirurgical Society of this city, which had originated the very measure, from all participation in it, been *predetermined* and too successfully executed.

As regards a "misunderstanding in the mode of calling the convention," we are perfectly at a loss to conceive how this could have arisen, with the "resolutions" or "suggestions" before it, to which it had given in its "unanimous adherence." These resolutions amply indicated of what character the convention was to have been. *The day was even fixed by the Quebec Society*, and short although the time was, the zeal of the Profession of the Niagara and Toronto Districts, was found perfectly adequate to the emergency.

We have probably devoted more space to this matter than, in the estimation, it may be, of some, it now deserves; our attention, however, having been recalled to the subject, by the publication in our last number of the report of the Quebec Medical Society, we have thought it a matter of duty to place these facts on record, that the profession may draw their own inferences from them. In expressing our own opinion on the matter, our object is not to sway theirs. The scheme which has been defeated, was one involving objects of too serious, too important a nature, that a detail of all the circumstances connected with it should not be submitted to that Profession whose interests have been thus affected. We have endeavoured to discharge this duty conscientiously, and we hope independently, and in thus venturing to differ from the Quebec Medical Society, we desire not to derogate from its high position, nor is our respect for it, or those of its members, many of whom we have the

pleasure of ranking among our personal friends, in the slightest degree diminished.

ESTABLISHMENT OF A MEDICAL SOCIETY AT HONG-KONG.

A meeting of the Medical men, practising in the city of Hong-Kong, in China, was held on the 13th May last, at the residence of Dr. Dill, who acted as secretary on the occasion, Dr. Tucker having been called to the chair. The following gentlemen were present. Drs. Tucker, Kennedy, Dill, O'Sullivan, Barton, Traill, Gilbert, Holgate, Young, Little, and Webber. Eleven resolutions were passed, of which the following is an epitome:—That it is desirable to form a Society, the chief objects of which are to be a more intimate intercourse among the medical men practising in China, for the sake of giving and receiving information on Medical and Surgical subjects; the formation of a Medical Library, and the discussion of topics relating to the prevalent diseases of China, and the native *Materia Medica*. After having resolved to denominate the Society, "The China Medico-Chirurgical Society," and the transaction of business relating to its monetary arrangements, and plans for interchange of proceedings with institutions of a similar nature in India and Great Britain, the office bearers for the year were appointed, viz., Dr. Tucker, President, Dr. Hobson, Secretary, Dr. Young, Librarian, and Drs. Dill, Barton, and Holgate, to be a committee of management.

CHEMICAL TABLES, containing a list of the Elementary Substances, with their symbols and atomic weights, and the general principles of the Chemical nomenclature, for the use of Students. By G. HOSE, Montreal.

The foregoing is the title of an unpretending little publication lately issued from the press by Mr. Hose, of this city. Designed especially for the use of Students, they will find it of some assistance; for as the atomic weights of the elementary bodies are given in the nearest round numbers, they will be more easily remembered. From that circumstance, however, it is rendered useless to the analytical Chemist, in whose computations the utmost nicety is required. Several errors appear to have crept in while passing through the printer's hands. Thus in the list of the metallic acids, we find the Mellitic, which is manifestly here out of place; and the formulæ of several of the organic acids are erroneously given, *e.g.* Benzoic Acid contains $C_{14}H_5O_3$ instead of $C_{15}H_5O_2$ and Sebacic Acid is composed of $C_{10}H_8O_3$ in place of $C_{10}H_8O_2$. Mr. Hose deserves credit for presenting to the Student an epitome of important facts in this department of science; and it is much to be regretted that his printer has not done him the full justice which he merited.

The New York Medical and Surgical Reporter, edited by CLARKSON T. COLLINS, M.D., New-York. Nos. 1, 2, 3, and 4.

The four first numbers of this periodical have reached us, which is designed to be a faithful expositor of the practice of the New York hospitals, in the medical and surgical clinics established there. It promises to be of considerable use, and will undoubtedly become a valuable adjunct to the medical literature of the day. Its peculiar field is extensive, and under judicious culture ought to afford valuable results. It has our best wishes for success.

KING'S COLLEGE, TORONTO.

A Convocation was holden at King's College, Toronto, on the 23d October last, at which the following degrees were conferred:—

- M.D. (*ad eundem.*)—Lucius O'Brien, Edinburgh.
- M.A.—Stafford Lightburne, William Ramsey, Fredk. W. Barron.
- C.M.—Frederick M. Hodder.
- B.A.—John Helliwell, Samuel S. McDonell, William Webb, Henry John Boulton, George Crookshank, Geo. W. Draper, Walter Stennett, John Roaf, James Stanton,

James Hagerman, Norman Bethune, Elliot Grasett, Thomas McLean, John E. Thomson, Delos White Beadle, Ira Lewis.

B.A. (*ad eundem.*)—Stafford Lightburne, Dublin. Sixteen new matriculations afterwards took place.

BOOKS, &c., RECEIVED DURING THE MONTH.

- Summary of the Transactions of the College of Physicians of Philadelphia. May to October.
- Boston Medical and Surgical Journal. Nos. 16 to 18.
- New-York Medical and Surgical Reporter. Vol. I. Nos. 1 to 4.
- Dublin Medical Press. Nos. 355 to 358.
- Buffalo Medical Journal. No. 7.
- Stockton's Dental Intelligencer. Vol. II. No. 1. Philadelp^hia.
- Provincial Medical and Surgical Journal. Vol. II. No. 45. London.
- Southern Medical and Surgical Journal. December No.
- The Medical Examiner. December No.

NOTICE TO CORRESPONDENTS.

We have to acknowledge the receipt of a paper "on a Case of Hydrocephalocoele," from Dr. Yates, of Kingston. It will appear in the next number, having been received too late for insertion in the present. In our next we will commence the publication of the "Bills of Mortality" for this city, in monthly returns.

MONTHLY METEOROLOGICAL REGISTER AT MONTREAL—NOVEMBER, 1845.

DATE.	THERMOMETER.				BAROMETER.				WINDS.			WEATHER.		
	7 A.M.	3 P.M.	10 P.M.	Mean.	7 A.M.	3 P.M.	10 P.M.	Mean.	7 A.M.	Noon.	6 P.M.	7 A.M.	3 P.M.	10 P.M.
1,	+51	+60	+48	55.5	29.70	29.69	29.67	29.67	S. W.	S.W.byW	S.W.byW	Rain	Fair	Fair
2,	" 37	" 53	" 45	45	29.76	29.76	29.76	29.76	W.	W.	W.	Fair	Fair	Fair
3,	" 39	" 45	" 42	42	29.73	29.72	29.70	29.72	N.E.	N. E.	N. E.	Rain	Rain	Fair
4,	" 41	" 54	" 47	47.5	29.69	29.67	29.62	29.66	N. E.	N. E.	N. E.	Fair	Rain	Rain
5,	" 45	" 50	" 44	47.5	29.55	29.58	29.64	29.59	W.	W.	W.	Rain	Fair	Fair
6,	" 41	" 48	" 44	44.5	29.67	29.68	29.72	29.69	S. W.	S. W.	S. W.	Fair	Rain	Cloudy
7,	" 38	" 45	" 36	41.5	29.86	29.84	29.80	29.83	S.W.byW	S.W.byW	S.W.byW	Fair	Fair	Fair
8,	" 34	" 41	" 35	37.5	29.80	29.80	29.80	29.80	S.W.byW	W. by S.	W. by S.	Cloudy	Rain	Fair
9,	" 33	" 38	" 36	35.5	29.64	29.53	29.46	29.54	N. E.	N. E.	N. F.	Cloudy	Rain	Rain
10,	" 37	" 40	" 34	38.5	29.32	29.47	29.72	29.50	N.W.byN.	N. W.	N. W.	Fair	Fair	Fair
11,	" 30	" 40	" 30	35	29.85	29.51	30.00	29.92	N. W.	N. W.	N. W.	Fair	Fair	Fair
12,	" 30	" 38	" 27	38	30.10	30.67	30.05	30.07	N. W.	N. W.	N. W.	Fair	Fair	Fair
13,	" 34	" 47	" 40	40.5	29.93	29.85	29.70	29.83	W. by S.	W. by S.	W. by S.	Fair	Fair	Fair
14,	" 43	" 40	" 35	41.5	29.56	29.62	29.73	29.63	W.	W.	W.	Fair	Rain	Rain
15,	" 25	" 40	" 35	32.5	30.00	29.97	29.55	29.84	N.W.byN.	N.W.byN.	N.W.byN.	Fair	Fair	Fair
16,	" 34	" 50	" 36	42	29.55	29.50	29.74	29.60	S.W.byW	W. S. W.	W. by N.	Fair	Fair	Fair
17,	" 30	" 46	" 37	38	29.94	29.90	30.04	29.96	W.	W.	W.	Fair	Rain	Rain
18,	" 37	" 44	" 40	40.5	29.96	29.89	29.80	29.88	N. W.	N. W.	N.W.	Rain	Rain	Rain
19,	" 46	" 48	" 42	47	29.66	29.63	29.58	29.62	N. W.	S. W.	S. W.	Rain	Fair	Fair
20,	" 36	" 47	" 45	41.5	29.58	29.52	29.38	29.49	W. by S.	W. S. W.	W.	Fair	Fair	Rain
21,	" 35	" 41	" 33	38	29.45	29.53	29.65	29.54	W.	W. N. W.	W. N. W.	Fair	Fair	Fair
22,	" 29	" 39	" 34	34	29.83	29.83	29.83	29.83	W. N. W.	W. N. W.	W. N. W.	Fair	Fair	Fair
23,	" 34	" 39	" 31	36.5	29.50	29.43	29.54	29.49	S.	S. W.	W.	Snow	Rain	Fair
24,	" 17	" 23	" 24	20	30.04	30.15	30.26	30.15	N. W.	N. W.	N.W.	Fair	Fair	Fair
25,	" 25	" 31	" 29	28	30.26	30.26	30.24	30.25	N. W.	S. W.	S. W.	Cloudy	Fair	Cloudy
26,	" 27	" 35	" 30	31	30.40	30.29	30.12	30.27	W. by S.	W. by S.	W.	Fair	Fair	Cloudy
27,	" 34	" 36	" 15	35	29.68	29.62	29.66	29.65	N.E.byE.	N. E.byE.	N. E.	Rain	Rain	Stormy
28,	" 5	" 10	" 5	7.5	29.98	30.13	30.30	30.14	W. by S.	W.	W.	Fair	Fair	Fair
29,	" 0	" 18	" 15	9	30.56	30.60	30.62	30.59	W.	W.	W.	Fair	Fair	Snow
30,	" 18	" 26	" 22	22	30.48	30.38	30.37	30.41	N. W.	N. W.	N.	Fair	Snow	Snow

Therm. } Max. Temp., 60° on the 1st
 } Min. " 0° " 29th
 Mean of the Month, 36° 4'

Barometer, { Maximum, 30.62 Inches on the 29th.
 } Minimum, 29.32 " " 10th.
 Mean of Month, 29.83 Inches.

MONTHLY METEOROLOGICAL REGISTER AT H. M. MAGNETICAL OBSERVATORY, TORONTO, C. W.—NOVEMBER, 1845.
 Latitude 43°. 39' 4. N. Longitude 79°. 21' 5. W. Elevation above Lake Ontario, 108 Feet.

DAY.	Barometer at Temp. of 32°.				Tension of Vapour.			Temperature of the Air.			Humidity of the Air.			Wind.			Rain & Snow.	WEATHER.
	7 A.M.	3 P.M.	10 P.M.	Mean.	7 A.M. 3 P.M. 10 P.M. Mean	7 A.M. 3 P.M. 10 P.M. Mean	7 A.M. 3 P.M. 10 P.M. Mean	7 A.M. 3 P.M. 10 P.M. Mean	7 A.M. 3 P.M. 10 P.M. Mean	7 A.M. 3 P.M. 10 P.M. Mean	7 A.M. 3 P.M. 10 P.M. Mean	7 A.M. 3 P.M. 10 P.M. Mean	7 A.M. 3 P.M. 10 P.M. Mean					
1,	29.396	29.283	29.299	29.292	.276 194. 192.	.236 47.3 57.8	39.4 46.6	.86 .41	.80	.76	Calm.	SW. by W.	Calm.	0.080	Generally clear.			
2,	29.081	29.139	29.237	29.173	.212 .261	.242 37.6 46.1	41.0 41.6	.95 .85	.95	.92	N. by W.	S. by W.	Calm.	.300	Raining a.m. Clouded all day.			
3,	29.318	29.353	29.356	29.344	.219 .221	.200 38.9 41.1	40.5 41.5	.93 .77	.80	.81	Calm.	Calm.	N.W. by W.	—	Mostly cloudy.			
4,	29.275	29.283	29.311	29.288	.208 .206	.200 39.0 42.4	40.3 41.6	.68 .81	.81	.81	Calm.	S.W.	S.W.	—	Clouded. Drizzling rain 2 p.m.			
5,	29.291	29.332	29.353	29.433	.215 .271	.216 .229 31.0 41.7	39.9 41.8	.82 .92	.88	.87	S. W.	N. W.	N. W.	—	Raining from 10 a.m. to 4 p.m.			
6,	29.637	29.524	29.485	29.493	.182 .206	.226 37.8 41.8	39.9 39.3	.80 .79	.93	.87	Calm.	S.W. by S.	Calm.	.170	Clouded. Slight rain 1 and 2 a.m.			
7,	29.341	29.423	29.450	29.382	.108 .170	.181 36.2 34.1	33.5 34.9	.91 .87	.95	.87	N.	N. by E.	N. N.E.	.100	Rain a.m. Slight snow, 6, 7, 8 p.m.			
8,	29.340	29.360	29.360	29.405	.167 .226	.169 35.9 45.4	38.2 39.2	.79 .75	.73	.81	W. by S.	Calm.	W. N. W.	.015	Partially clouded.			
9,	29.501	29.579	29.647	29.603	.183 .206	.181 37.0 42.4	37.4 37.8	.88 .81	.84	.84	N. N. E.	Calm.	N.	—	Partially clouded.			
10,	29.708	29.717	29.728	29.723	.152 .175	.141 30.0 40.1	30.8 35.8	.91 .76	.81	.78	Calm.	S.	Calm.	—	Densely clouded all day. [p.m.]			
11,	29.688	29.499	29.499	29.502	.188 .296	.231 35.8 50.0	45.5 44.5	.90 .84	.76	.81	Calm.	S.W. by S.	W. S. W.	—	Genly cloudy—halo round moon S			
12,	29.404	29.409	29.596	29.501	.211 .181	.193 40.1 49.2	38.3 41.9	.86 .51	.85	.85	W. by S.	N. W.	N. W.	—	Halo 1 a.m. clouded a.m. mostly clear p.m.			
13,	29.699	29.397	29.438	29.573	.157 .226	.221 30.8 43.1	42.1 38.6	.92 .83	.83	.88	Calm.	S. by E.	S. W. by S.	—	Mostly clear.			
14,	29.508	29.499	29.507	29.511	.225 —	.230 39.3 46.2	48.7 45.8	.91 1.00	1.00	.98	Calm.	Calm.	Calm.	—	Generally clear.			
15,	29.493	29.357	29.176	29.332	.319 .349	.329 47.1 52.1	52.3 51.1	1.00 .91	.86	.91	Calm.	E. by N.	Calm.	—	Unclouded but hazy.			
16,	29.300	29.325	29.317	29.311	.200 .194	.156 48.6 44.6	42.9 31.2	.69 .71	.90	.77	S.W. by W.	S. W.	Calm.	.255	Hazy a.m. Rain 10 a.m. to 4 p.m.			
17,	29.200	29.062	29.129	29.145	.195 .275	.207 37.2 51.2	42.8 44.0	.88 .74	.75	.74	Calm.	S.S.W.	Calm.	.030	Rain 0 to 5 a.m. and 9 to 12 p.m.			
18,	29.274	29.354	29.463	29.406	.124 .135	.132 33.6 36.2	27.0 33.0	.64 .63	.85	.77	W. S. W.	W. by S.	W. by S.	—	Raining a.m., clear 8 to 12 p.m.			
19,	29.579	29.511	29.206	29.517	.142 .147	.146 31.0 35.6	37.6 32.1	.81 .69	.83	.78	W. by N.	Calm.	N. N. E.	—	Halo round moon a.m., genly cloudy			
20,	29.802	29.856	29.883	29.852	.099 .091	.103 21.2 26.8	24.0 24.7	.84 .61	.77	.76	Calm.	S. W.	Calm.	.235	Mostly clear.			
21,	29.729	29.699	29.729	29.795	.170 .139	.126 14.4 31.9	38.3 34.7	.95 .60	.66	.73	S.E. by S.	S.W. by W.	Calm.	—	Rain a.m. Occasional light snow.			
22,	30.006	29.814	29.602	29.741	.154 .152	.151 15.1 15.1	17.6 17.6	.84 .82	.84	.83	S.W. by S.	N. by W.	Calm.	—	Genly clear. Detached clouds.			
23,	29.463	29.437	29.543	29.501	.096 .094	.077 21.8 21.8	14.2 13.8	.79 .78	.80	.80	N.	N. W.	W. by S.	—	Overcast. Dense haze.			
24,	29.708	29.792	29.944	29.860	.038 .074	.067 7.6 19.3	14.6 13.8	.57 .68	.75	.74	N.W. by N.	Calm.	Calm.	0.5 sn	Overcast. Dense haze. Foggy.			
25,	30.062	30.084	30.060	30.020	.072 .108	.105 15.4 20.8	20.6 19.6	.78 .93	.91	.83	Calm.	N. N. E.	W.	—	Snow 11 to 11 a.m., clear 8 to 12 p.m.			
26,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Auroral light 0 a.m., genly clear.			
27,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Clear a.m., snow moon to 6 p.m.			
28,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Mostly clouded.			
29,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
30,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Mean	29.512	29.492	29.504	29.508	.176 .192	.176 34.0 40.2	35.4 36.5	.85 .75	.83	.81	—	—	Total,	6.185*	—			

* Rain, 1.185 inches. Snow, 5.0 inches.—Total, 6.185 inches.

Highest Barometer, .. 30.125 at 10 a.m., of 27th.
 Lowest .. 29.028 at 4 p.m., of 20th.
 Highest Temperature, .. 59° 5 on 1st, p.m.
 Lowest .. 17° 6 on 29th, a.m.
 Mean Daily .. 25° 8 on 1st, p.m.—21, a.m.

Under the head of Tension of Vapour, is given the elastic force of the Aqueous Vapour in the Atmosphere at each Observation, in decimals of an inch of Mercury, or the proportion of the Barometric pressure due to its presence.
 Under the head of Humidity of the Air, is given the proportion the Aqueous Vapour bears to the quantity the air is capable of sustaining at the existing temperature, saturation being represented by 1.00.
 The Instruments are Standard Instruments. The Rain Gauge 27 feet above the soil.
 The quantity of Rain received each 24 hours, is noted at 9 a.m., and is marked in inches.

Proportion of Wind from each Quarter—
 N.W. .. 199
 N.W. .. 179
 N.E. .. 51
 S.E. .. 21
 S.W. .. 216