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CANADA

# MEDICAL JOURNAL.

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## ORIGINAL COMMUNICATIONS.

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*On Testing for Strychnine.* By G. P. GIRDWOOD, Esq., M.R.C.S.L.,  
Asst. Surgeon 1st Battalion Grenadier Guards.

The numerous cases of accidental or intentional poisoning with this deadly agent, the facility with which it is obtained, and the constant practice of using it for the destruction of vermin, by which accidents so frequently occur, and the various legal questions arising from its use, render the detection of strychnine a matter of great importance. The distinctive tests for the presence of strychnine, when pure, are simple and strongly characteristic. If the suspected matter be placed on a piece of white porcelain, moistened with a drop of strong sulphuric acid, and a small crystal of bichromate of potash added and moved about, it leaves in its track a beautiful purple color, by which the presence of strychnine may at once be recognized. This color may be produced in a variety of ways with strychnine; sulphuric acid and peroxide of lead, or manganese will give it. Strychnine moistened with sulphuric acid on a small piece of platina foil and a galvanic current passed through it, as suggested by Dr. Letheby, will also produce the same color. With strong nitric acid, strychnine, if pure, produces no change, but it usually gives a fine red color, which changes quickly to yellow, owing to the presence of a small quantity of brucine.

The sulphuric acid and bichromate of potash, and the sulphuric acid and galvanic current, are the two tests most to be relied upon, and are certain and easy of application. To apply these tests with efficacy, the strychnine must be in an isolated condition: it is seldom that the medical man is called upon to test it in this state. He is usually required to decide if it has been the agent that has destroyed life, and he has to seek it in some organic matter, such as the body of the

deceased, or in some mixture in which it has been administered. In these cases it is first necessary to separate the strychnine, and obtain it in such a form as will enable the analyst to apply his tests without chance of error. The sulphuric acid and bichromate test is capable of detecting so small a quantity as the  $\frac{1}{80000}$ th of a grain, when freed from other matter. At the trial of Palmer in England in the year 1856, it was stated that strychnine could not be detected in the body after death. In conjunction with Mr. Rodgers, of London, I at that time made a large series of experiments, the results of which we published in the *London Lancet*. In the course of these experiments we arrived at the following as the best mode of separating strychnine from organic matters: The substance is to be cut into small pieces, covered with distilled water, and acidulated with one-sixth the quantity of pure hydrochloric acid, and heated over a water bath until the tissues are completely disintegrated; this is now to be filtered, and the filtrate neutralized with excess of ammonia. If there be any deposit it should be filtered again. The filtrate is now agitated for some minutes with a small quantity of chloroform in a long glass tube, and allowed to settle. When the chloroform is separated from the liquid, it is to be drawn off with a pipette, and transferred to an evaporating basin, and the chloroform expelled on a water bath. The residue is then moistened with concentrated sulphuric acid, and kept on a water bath for an hour. It is then diluted with water, filtered, the acid neutralized with excess of ammonia and again agitated with chloroform: the chloroform drawn off as before. This will generally yield the strychnine in a sufficiently pure state for testing. If now a small quantity of the chloroform be evaporated to dryness on a small piece of white porcelain, and moistened with strong sulphuric acid, and no change takes place, a minute crystal of bichromate of potash may be drawn across the spot, and if strychnine be present the characteristic purple color will immediately be seen, but if the sulphuric acid be discolored, it must be put back with the remaining chloroform, and the whole agitated with a portion of diluted sulphuric acid, which will extract the strychnine from the chloroform, leaving behind some fatty matters that may have been taken up by the chloroform. The acid solution is carefully separated from the chloroform, again neutralised with excess of ammonia, and agitated with a fresh portion of chloroform. This chloroform will now yield the whole of the strychnine pure, and may be tested as before with sulphuric acid and bichromate of potash, or any of the other tests for strychnine.

This process is founded, firstly, on the fact that strychnine resists the action of concentrated sulphuric acid at a temperature of  $212^{\circ}$ ; and,

secondly, that chloroform will extract strychnine from an alkaline solution, but not from an acid one.

In the course of the experiments which were carried on by Mr. Rodgers and myself, we detected strychnine in the stomach, tissues, and even in the bones and urine of a rabbit which was poisoned with five doses of strychnine, one-thirtieth of a grain in each dose, administered at intervals of fifteen minutes. It was also easily detected in the remains of a dog that had been buried twelve months, and the tissues converted into adipocere. In this case it was also detected in the bones, scraped free from other matter.

The fact that strychnine is capable of resisting the putrefactive and fermentative processes, and the action of strong sulphuric acid, indicates that it may be detected, long after burial, in cases where it has been the cause of death.

Strychnine has frequently been detected in the urine of patients when taken in medicinal doses. When looking for strychnine in the urine or in the bones, it is well to take advantage of the phosphoric acid contained in them, and precipitate it as triple phosphate by the addition of sulphate of magnesia and excess of ammonia, whereby a copious deposit of sulphate of lime is thrown down, and also of triple phosphate, both of which materially assist in the examination by carrying down with them a large quantity of organic matter, leaving a clear solution more easy of subsequent manipulation.

Ammonia will throw down strychnine, and it may be said that strychnine should be looked for in the precipitate produced by that re-agent. This would be true if a large quantity of strychnine were present; but in the analysis for strychnine in cases of poisoning, especially in the tissues, only a very small quantity must be expected, and strychnine is soluble in 7000 parts of cold water; hence a filtrate of a pint, which is a usual quantity, would hold in solution, although alkaline with ammonia, a grain and a half of strychnine, which would be lost if looked for in the precipitate, and would be ample to destroy life.

Montreal, July, 1864.

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*Case of Filaria Medinensis Dracunculus, or Guinea Worm.* By  
FREDERICK ROBINSON, M.D., M.R.C.P., London, Surgeon, Scots  
Fusilier Guards.

The subject of this notice served with his regiment in India during the mutiny of 1857. On one occasion, while stationed in a fort which was besieged by the rebels for a period of sixty days, the garrison were

forced to drink water from a stagnant pool. The water was covered with decomposing vegetable matter, and was so foul that before using it, it had to be strained and boiled; it was further purified by the addition of some saline preparation.

No ill results were experienced by him at the time; but he states that two of his comrades were afflicted in their feet with the worm, and were under treatment several months subsequent to the siege; and furthermore, that while on their passage home, an officer of the Indian Service died on board the ship, from the effects of this disease. Dysentery, and other bowel affections, were prevalent at the time among the soldiers.

Samuel Smith, *æt.* 31, a healthy young man, thirteen years a soldier, seven of which he served in India, was admitted into hospital April 6, 1862, suffering from a small swelling resembling somewhat a boil, situated between the inner malleolus of left ankle and tendo achillis; there was considerable constitutional disturbance, and on the second night after admission the skin gave way, and the end of a Guinea worm made its appearance. To use his own words, he "caught hold of it, and it slipped in again." The following morning the worm again appeared, when the orderly very injudiciously attempted to pull it out, and it broke. This was followed by considerable pain of a burning character and increased fever. He said he felt the worm moving beneath the skin. It appeared to burrow beneath the integument, which became erysipelatous, completely encircling the ankle; abscesses formed at various points, necessitating several incisions; but at length the worm was entirely expelled; the wound healed kindly, and the man was discharged cured. The treatment throughout consisted of aperients, opiates, generous diet, and the local application of linseed poultice. The worm is in two pieces, each measuring about six inches, giving an entire length of somewhat over a foot. The color is white, and it is in size about that of a fine fiddle-string. Both extremities are blunt; no distinct head is observable. It was probably destroyed in the first effort at extraction.

On microscopic examination the body of the parasite was found to contain innumerable young, presenting the usual characteristic appearance, a very correct illustration of which is to be found in the second volume of Dr. Aiken's valuable treatise on the Science and Practice of Medicine.

Toward the end of the case the worm was discharged in very many small pieces adhering to the surface of the poultice, and resembling small shreds of lymph. A point of considerable interest is the length of time which elapsed from when it is presumed the ovum was deposited, to the

period of its expulsion. The man never suffered any inconvenience in the interim, and formed one of the battalion of Guards who travelled over land to Canada from Halifax, after the "Trent" difficulty.

He returned from India in September, 1860, and continued to do duty up to the period of his admission into hospital on the 6th April, 1862.

The Guinea worm is found chiefly in Africa; it has been observed also in Arabia-Petræa, the shores of the Persian Gulf, Caspian Sea, River Ganges, Upper Egypt, and Abyssinia. It seems to have been known to the Arabians and Greeks, the latter of whom, according to Pliny, termed it *δρακονττα*, whence the name *dracunculus*. Læfler, who resided in Africa many years, states that he never found either the worm itself nor its ova in the waters of that country. And Hind, after frequent examinations of the waters of countries where the worm has been observed, declares that he failed in finding the worm or its ova. It is believed by many to be alone developed in the human body, though Rayer, in his work on diseases of the skin, says, "The *filiaria* inhabits the cellular tissue of animals of all classes." According to Sir James McGregor, and other observers, it is almost invariably found in the lower extremities, chiefly in the feet. Of 181 cases collected by Sir James, two only occurred in the hands. As to its solitary habit there is a difference of opinion, some asserting that it is invariably found singly, while others assert that it is not uncommon to meet with several worms in the same patient at the same time.

There is, however, no doubt at the present day on this point. Abundance of evidence is forthcoming, proving the existence of many worms in the same individual at the same time. In the Transactions of the Hydrabad Medical and Philosophical Society, Dr. Minas, of Sirsa, mentions the case of a native, in whom death resulted, and on examination the skin was found an entire network of Guinea worms. Dubois has seen as many as seven taken out at once from the same leg; and Mr. Forbes has seen six or seven extracted from the same patient: at the time he wrote, he was treating a patient in hospital, in whom no less than fifteen worms were exposed and in course of extraction. Drs. Grierson and Lorimer bear similar testimony; and Dr. A. Farre mentions the case of a native, in whom fifty worms existed at the same time.

All writers seem agreed as to its physical characters, but with regard to length, accounts vary from a few inches to several feet. Its size is characteristic, being usually that of a small fiddle-string; the specimen above described resembles a piece of catgut.

Montreal, July, 1864.

*Case of Malignant Pustule occurring in the Montreal General Hospital.*

By J. M. DRAKE, M.D., House Surgeon.

William Little, aged 52, and a native of England, was admitted into the Montreal General Hospital on the 1st of August, 1863, under the care of Dr. Robert Palmer Howard, complaining of swelling of the left eyelid and face. He states that he is employed by the Corporation to bury the dead animals found in the streets; and that he interred on Thursday the 30th July several pigs, dogs, cats, and cows, as well as other animals. On Friday morning the 31st, he awoke about half-past five complaining of slight pain in the eyelid: at the same time he noticed a white speck on the edge like a sty, and some swelling, which rapidly increased. He did not feel sick or ill. At nine consulted Dr. Reddy, who ordered a lotion and poultices, stating it was the bite of an insect. He has been in the habit of taking from two to three pints of beer per day; some time ago used to take half a pint of whiskey in the same time. He is a strong looking man. The swelling is on the left side of the face, extending from the upper part of the forehead to below the chin. The eyelid is quite œdematous, and so much swollen that he is unable to open it. The color of the integument is natural, except over the eyelids, which are of a dull red, and erysipelatous in appearance. The face is much distorted by the swelling, which is soft and doughy,—not hard at any point. No swelling of the neighboring glands. At the point on the edge of the upper eyelid a whitish colored spot is seen, which corresponds with the place where he first noticed inflammation. There is nothing like a boil or pustule or carbuncle. The swelling is uniform, and seems to be merely a serous effusion. There is a slight purulent discharge from the conjunctiva. On opening the eyelid by a speculum, the eye ball and ocular conjunctiva appear healthy; but there is intense chemosis of the palpebral conjunctiva. The swelling appears to be gradually extending to the opposite side of the face.

*Constitutional Symptoms.*—Tongue moist, and slightly coated with a yellowish fur. Pulse 78, and natural. Bowels moved yesterday,—rather confined. Feels thirsty. No headache. No pain, except in left cheek, where there is slight pain on his attempting to open his mouth.

*Treatment.*—Apply nitric acid to white spot on eyelid. Free incisions to be made in upper and lower eyelids. Bathe well with warm water. ℞ Tr. Ferri Mu. ʒ iv. Liq. Arseni chlor. ʒ j., Tr. Cinch ʒ jii. Aqua ad. ʒ xii. Take two table-spoonsful every second or third hour. ℞ Liq. Plumb. Diact. ʒ ii. Tr. opii. ʒ ss Aqua Oj. ft. lotio. Apply diligently. Is to have milk diet, and a pint of beef tea. Lemonade for a drink. ℞ Chlorodyne ʒ ss. H.S.

*2nd August.* A good deal of serum has escaped from the incisions. He passed a restless night. Tongue coated with a white fur and moist. The swelling has reached to the right side of the face, and is extending down the left side of the neck. The countenance is fearfully distorted. He complains of a feeling of obstruction in the throat. The voice is hoarse. Says he feels as if there was a potato in his throat, which will neither go up nor down. Has taken nearly all his beef tea. Is moderately thirsty. Perfectly calm and rational during the night. Pulse 84. Skin moist and cool. To have a black draught, (which he immediately vomited.) To continue lotion to face, and apply a linseed poultice, with acetate of lead to neck. Throat to be brushed out with a solution of Agt. Nit. gr. xxx. ad aqua  $\zeta$  j, and to take a seidlitz powder every hour till his bowels move. Ordered an additional pint of beef tea, and 4oz. of brandy. 4 o'clock, p.m. Pulse 110. Skin on eyelids of both sides of face of a dark livid color. The swelling is harder, and still extending. Difficulty of swallowing greater; pain also increased. Bowels have moved twice.  $\mathcal{R}$  Quinine Sulph. gr. ii., Hoffman's anodyne,  $\zeta$  ss. Tr. Ferri. Mu.  $\zeta$  ss. Mist. Camph.  $\zeta$  j. ter in die. Brandy  $\zeta$  vj. a pint of beer. Ordered a port wine poultice to face and neck. To be removed to an empty ward and secluded. Kreosote to be applied around swelling. 10 p.m. Pulse 128.

*3rd August—noon.* Swelling continues to extend down the neck, but does not appear to be so great on the face. The color of the skin of the face, especially that of the eyelids on both sides, appears of a livid hue,—dark purple in some spots. He says he feels better, but it is evident his mind wanders a little. The difficulty of swallowing is greater, but he breathes freely. The temperature of the extremities is falling greatly. Pulse almost imperceptible. Great restlessness. 7 p.m. Very restless, and is wandering a good deal. Tries to get out of bed.  $\mathcal{R}$  Chlorodyne  $\zeta$  ss. Appears to suffer a good deal from difficulty of breathing. Has not been able to swallow for some hours. 10 p.m. Died.

*Remarks.*—There can be little doubt that the cause of this man's disorder was a bite from some insect, which had been feeding on carrion. It was, however, not like what is described as charbon, since there was no pustule or slough. There was no shivering, no formation of pus, and comparatively little constitutional disturbance for the first forty-eight hours. The pulse was only 78 when admitted fully thirty-six hours after he first noticed the swelling. He was depressed and downhearted throughout. Treatment seemed not to exercise the slightest influence over the disease. There was no swelling of the glands.



## HOSPITAL REPORTS.

*Case of Traumatic Epilepsy, under the care of DR. JONES.*—Henri Urban, a German, aged 20 years, was admitted into the Montreal General Hospital on the 11th October, 1862. About half an hour previous to admission, while standing on a ladder, hanging up a piece of meat on a hook, in the St. Lawrence Market, the ladder slipped, and he fell to the ground. In the fall his left forearm caught on a lower hook. It inflicted a severe lacerated wound. There was considerable hemorrhage until reaching the hospital, when it was easily controlled.

On the 8th of November, about seven o'clock, he was seen to enter the water-closet, and in a minute or so afterwards, a low piercing cry was heard proceeding from it. On going thither he was found in a most violent epileptic fit. He was removed to his bed, and Dr. Taylor, the House Surgeon, called; and so violent were the paroxysms, which were of a true epileptic character, that it took several persons to hold him. About a drachm and a half of chloroform was administered, without lessening the fit. Dr. Taylor accordingly bled him to the extent of eighteen ounces, which seemingly gave relief. The duration of the attack was about half an hour. A drachm of Hoffman's anodyne, with forty drops of solution of morphia, was administered soon after he came out of the fit; and about three hours after, he got five grains of calomel and one drop of croton oil.

At the time of the attack the wound had almost entirely cicatrized: he never had an epileptic fit before. He states that he felt a distinct epileptic aura commencing in the hand of the wounded arm, and gradually working up till it reached his shoulder, when he suddenly lost consciousness. The patient was dismissed on the 22d of November, quite well, not having had any repetition of the attack.

*Case of Idiopathic Tetanus, under the care of DR. JONES.*—John McNeill, an Irishman, aged 36 years, presented himself for admission among the out patients of the Montreal General Hospital, on the 10th of November, 1862, suffering from trismus. He stated that about a week previous he attempted to perform the feat of raising a chair with his teeth, when he felt his jaw receive a severe wrench, but he experienced no further inconvenience till the morning previous to admission, when he felt his lower jaw getting stiff; this continued to increase, and on admission he was barely able to open it sufficiently, to allow the handle of a spoon to enter. He was ordered a liniment of chloroform and belladonna, to apply to the muscles of the lower jaw, and to have a dose of croton oil.

12th.—Bowels have been moved freely. Difficulty of swallowing apparently increasing. Still able to open his mouth a little.

13th.—The muscles of the abdomen have become tense. Has had several spasms. To have a belladonna plaster over the abdomen, and to get twenty drops of the tincture of canabis indica every third hour.

14th.—The Indian hemp has apparently somewhat lessened the severity of the attacks. Croton oil to be again administered. The liniment ordered on admission is to be discontinued, and he is to use the following in its place: ℞ chloroform ʒiii, tr. aconite, tr. belladonna, aa ʒj, liq. amm. ʒj, lin. saponis ʒj. To have beef tea in large quantities.

15th.—Towards daylight this morning the spasmodic attacks became very violent, and he died in the afternoon.

*Variola treated with the Sarracinea Purpurea.* Reported by HERBERT S. TEW, M.D., Acting Apothecary Montreal General Hospital.—George Bonacina, painter, aged 22, was admitted into the Montreal General Hospital, 20th June, 1864, under the care of Dr. Reddy. He states that on the 17th (Friday previously) he was attacked with a severe twisting pain in the belly, near the navel, which prevented him from standing upright, his bowels constipated for a few days; from the acuteness of the pain he was obliged to seek medical relief, and applied to Dr. Reddy, from whom he received considerable benefit, although the pain had not altogether subsided. Matters continued thus till Sunday, 20th, when he again called upon Dr. R., who perceived a papular rash upon his forehead, and then decided that it was advisable that he should seek admission into the hospital. I should have stated that he considered at first he was suffering from an attack of "painters' colic." On admission he complained of severe headache, pain in the chest, spine, and abdomen, also feverishness and general uneasiness; great thirst; pulse 100, and full; tongue white, thickly coated, and moist; skin hot, with slight perspiration; on the forehead, and on the arms, legs, and trunk, a scattered minute papular rash was making its appearance. It was decided,—more especially as he had never been vaccinated,—that this would be a favorable case to give the *sarracinea purpurea* a full and fair trial. He was accordingly ordered to take two ounces of the infusion (ʒj ad. Oj) every hour.

June 22.—Pulse 88; tongue moist, and cleaner than yesterday; bowels opened twice; appetite capricious; he slept well, and feels more comfortable; pustules, filling rapidly; are getting very thick on the face and neck, also on the thighs and abdomen.

June 23.—Pulse 104; tongue clean and moist; he reports himself

feeling very comfortable, with the exception that his throat feels sore. Pustules much fuller, with good red areola, but they are more of a confluent character on the face; and all over the body a slight but distinct depression appears. He says his medicine causes him to perspire very much. On examining the throat no pustules are visible; he was ordered a warm linseed poultice, constantly renewed, and to continue the *sarracinea purpurea*.

June 24.—Pulse 100; tongue and throat very sore, and pustules appearing. They are confluent on the face and other parts of the body, and have to-day a rather flat unhealthy appearance. Dr. Reddy feels uneasy about the result. The patient's bowels have not been opened for two days; ordered a dose of castor oil; to continue mixture and poultices.

June 25.—Pulse 136, small and compressible; tongue and throat continuing very sore; is very restless; complains of no pain, and is occasionally very delirious; pustules continue flat, and are not filling properly. Ordered to continue the *sarracinea purpurea*; borax wash to mouth and throat, and the following mixture:

℞ Liq. ammon. acet, ℥jss.; Spirit etheris nit., ℥ss.; Vin. ipecac., ℥i.; Aqua ad.; ℥vi.; ℥ss. every three hours. To continue stimulants if necessary.

June 28.—Pulse 128; soft and regular; tongue dry and brown; bowels regular; pustules present the same character: his voice is weak and husky. To continue treatment of yesterday.

June 28.—Has been very delirious all night; refuses to take either medicines or nourishment of any kind, unless with difficulty. The pustules all over body are quite flat and watery looking; he also appears to have great difficulty in breathing. From the evening of this day till 2.30 a m. next morning, he gradually appeared to grow worse, when he suddenly expired.

It is worthy of notice that the above case had never been vaccinated, and on entering hospital he appeared to be a person who had enjoyed excellent health, as was admitted by himself. This was considered a favorable case for the administration of the *sarracinea purpurea*, which was freshly prepared, and given most regularly, having myself carefully superintended the case from the very commencement. Dr. Reddy mentioned that he has repeatedly tried the *sarracinea purpurea*; he considers that in two of his cases he observed signs of benefit during its administration, but that he looked upon it, at least in his hands, as a very doubtful remedy, although, he added, that he may not have the benefit of using the fresh plant, and that perhaps failure may be partly attributed to that cause.

## REVIEWS AND NOTICES OF BOOKS.

*Medical Diagnosis, with Special Reference to Practical Medicine.—a Guide to the Knowledge and Discrimination of Disease.* By J. M. DA COSTA, M.D., Lecturer on Clinical Medicine, and Physician to the Philadelphia Hospital. Philadelphia: J. B. Lippincott & Co. Montreal: Dawson Bros.

The author of the above volume is evidently a thoroughly practical physician,—one who, having ample opportunities for observation, has put them to good use. The subject of Medical Diagnosis is full of interest to all laborers in the field of medical science; but especially is it interesting to the young physician who, during his pupilage and hospital attendance, has had but limited time to give the subject more than casual attention. It is only of late years that clinical teachers have looked upon it as the important subject it really is; and there are few now who, on entering the profession, have not instilled into them the principles of medical diagnosis. The multiplicity of subjects that engage the student's time during his attendance at college are so great, that it is impossible for his mind to thoroughly weigh the various symptoms—often so similar in different cases: hence a work like the volume before us is certainly indispensable to the young practitioner. It should be his constant study,—its teachings should be thoroughly mastered. If such was the case, we feel sure many an error,—the result of inexperience—would be saved, and professional reputation not placed in jeopardy. Even older practitioners will find this manual of medical diagnosis of great service. Each symptom is so completely analysed, and the diagnosis of each case rendered so plain, that it is almost impossible for any attentive student of the work to fall into error. The almost countless number of diseases to which the human family is heir, are grouped together according to their most marked symptoms, and not according to their pathological characters. We know that to some the former arrangement will not be so acceptable, as if the latter had been adopted. For several reasons, perhaps, it is a pity that the pathological classification has not been followed; but, taking all things into consideration, the work being more intended for junior practitioners—though of value to all—its clinical character is enhanced by the arrangement the author adopts. There is one chapter which we consider worthy of especial mention: we refer to that on diseases of the nervous system. We are yet in our



The various fevers are treated of at considerable length, and the differential features of each, thoroughly explained. Regarding a mistake which not unfrequently happens,—that of a typhoid condition being mistaken for a true case of typhoid fever—Dr. Da Costa thus writes:—

“No blunder is more common than to misconstrue into typhoid fever a typhoid condition of the system. We may find this condition in many different complaints, both acute and chronic; but more especially are purulent infection, some forms of pneumonia, dysentery, and erysipelas attended with delirium, drowsiness, dry brown tongue, and extreme prostration,—in one word, therefore with a typhoid state.

“Yet a typhoid state is not typhoid fever; it is simply a low condition of the system that may be present in very many dissimilar maladies, and which is present in its most perfect form in typhoid fever. But in this malign complaint we have other signs than those of vital depression; we find joined to it diarrhœa, tympanites, epistaxis, an eruption, and special manifestations of disturbance of the nervous system,—all symptoms bearing no direct relation to the adynamia, and thus serving as valuable distinctive marks. An examination, too, of the urine is often of signal service. There are, indeed, cases of Bright’s disease, and of abscess of the kidney, in which the poisoning of the blood that happens, occasions a very deceptive likeness to typhoid fever—so deceptive, that only a minute examination of the urine can fully explain the true meaning of the symptoms. The following case well illustrates this:—A man, about forty-five years of age, was admitted into the Philadelphia hospital in January 1863. He was very prostrate, and hardly able to give an account of himself. It was, however, ascertained that he was not a person of intemperate habits, and that he had been attending to his work until within two weeks. He was evidently stupid, and, when questioned about himself, seemed to have great difficulty in remembering and in collecting his thoughts. He had fever; a pulse above 100; a dry brown tongue. The heart-sounds were feeble, the heart increased in size. The urine was at times turbid, and contained a slight whitish sediment, which was not, however, examined with the microscope. His mind wandered at night; the abdomen was distended, and in parts slightly tender; several doubtful red spots were detected on its surface. In fact, he appeared to have almost every one of the more constant symptoms of typhoid fever, excepting the diarrhœa. A few days after his admission he became comatose, and sank. The intestinal glands were found in a healthy condition; but both kidneys were thoroughly disorganised and filled with pus.”

We could give many extracts from this work, which would be inter-

esting and valuable to our readers; but our space being limited, forbids our doing so. The main object of the work is diagnosis; but in many cases the author has added the prognosis; and where it could be done without interfering with the plan of the book, a summary of treatment. This gives increased value to it as a practical work. Having said so much in praise, we feel that there are one or two faults we must not omit to mention. We think that some chapters bear evidence of being somewhat hastily written; and throughout there is not that attention to punctuation which we would like to have seen. As a whole, however, we consider it a valuable addition to medical literature, and advise our readers to obtain a copy of the work. It is entirely different in its arrangement to Barclay's Medical Diagnosis, which is more properly a guide as to the method to be followed in investigating individual cases of disease,—this book being, as its name implies, a true diagnostic work, or an analysis of the various symptoms of disease,—assigning to each its true place. The work is beautifully printed, and forms a handsome volume of almost seven hundred pages.

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*The British Pharmacopœia.* Published under the direction of the General Council of Medical Education and Registration of the United Kingdom, pursuant to the Medical Act, 1858. Printed for the General Medical Council; By Spottiswoode & Co., New Street Square, E. C., London, octavo, pp. 444, 1864.

The British Pharmacopœia, issued by the General Council, has failed to give satisfaction to the profession. It has certainly received unsparing criticism at the hands of the Medical press in all sections of the country. It does appear strange that the Medical Council, composed as it is of twenty-five members, who are the first authorities in the United Kingdom on the subject of pharmacy, should have issued so meagre a work.

We are aware that it is not a dispensatory, nor is it expected to be. Nevertheless a somewhat more complete work, devoid of actual blunders, might have been looked for. The Medical Council are endowed with extraordinary powers, which, notwithstanding the imperial act of 1858, have in a great measure fallen through. The British Pharmacopœia is not adopted by the profession, nor will it be until it has received such alteration and modification as are in the premises abundantly called for.

If the Medical Council possess the authority of legislating for the entire kingdom and colonies, it would be well had they exhibited greater care and diligence in the performance of this part of their duty. As

colonists we speak feelingly, as, although, unrepresented, we are nevertheless informed that "the Council must further caution all Medical Practitioners whether at home or in the colonies or in the public services, that, in order to exercise their profession safely, it is incumbent on them to make themselves familiar with the changes effected by the present work."

In the first part of the work, which is confined to the organic *materia medica*, there are manifestly many errors, though of a minor degree, such as incorrect botanical descriptions. For instance, opium is described as occurring in "irregular lumps, weighing from four ounces to two pounds; enveloped in a poppy leaf, and generally covered with rumex seeds." That opium sometimes is enveloped in poppy leaves is undeniable, but not invariably so; again, the part of the rumex, which in the finer specimens of Smyrna opium is found adherent to the mass, is the fruit; when the seeds alone exist, they are few, and appear to have remained after much handling, whereby the capsules in which they are contained have been rubbed off. Again, black pepper is described as being brought chiefly from the West Indies; although cultivated there, yet the greater part of what is met with in commerce is brought from the Islands of the Indian Archipelago, chiefly Sumatra.

Many other imperfections we might note, did space permit, which exhibit great laxity in the preparation of this work. Many old and favored recipes have been left out or so altered as not to be recognisable. This is much to be regretted as we cannot too tenaciously hold on to a good thing. Our experience of drugs is by no means flattering; and it is a pity to see introduced into a national work, one destined to become the standard of medical practice, preparations of doubtful efficacy, and others of acknowledged worth, which have stood the test of time, either expunged or so changed as to be no longer the same, as will be found to be the case in the second part of the book devoted to "preparations and compounds."

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## PERISCOPIC DEPARTMENT.

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### Medical Jurisprudence.

#### THE LA POMMERAIS TRIAL.

The prisoner, La Pommerais, was a homeopathist practitioner; he had induced his victim, Mad. Pauw, to insure her life for the sum of £22,000 in eight different insurance offices; he had also persuaded her to assign



the insurances to himself. A short time before her death, she had, by his advice, feigned illness in order to deceive the insurance offices, and obtain from them a life annuity in place of an insurance. Although a homeopathic practitioner, La Pommerais was found to be possessed of a large quantity of the most potent poisons. In the month of June last, he had purchased three grammes of digitaline, of which only fifteen centigrammes remained in his possession. At eight o'clock in the evening before the death of Madame de Pauw, La Pommerais visited her. Directly after he had left her she was taken ill, vomited violently through the night, and died at five o'clock in the afternoon of the next day.

It was on the 17th of November last that M. Paul Blachez was called to attend Madame de Pauw. On his arrival, he found her in a dying state. She was apparently unconscious; at least it was impossible to elicit any sign from her: her body was covered with an abundant cold sweat; there was great disturbance of the circulation, the pulse being irregular and intermitting. She cried out continually, in a weak voice, "Oh, my head! oh, my head!" She retched several times, but whilst he was with her did not vomit freely. She then fainted so completely that her pulse entirely disappeared, a whitish froth escaped from her mouth, and she died. He at the time attributed her death to the rupture of an aneurism. She had, however, in the September previously, consulted, amongst other medical men, a M. Gaudinot, on account of a fall which she asserted she had had, and he had attended her at intervals up to the day of her death. M. Gaudinot was applied to for a certificate of the cause of death, and he gave one to the effect that it was the result of gastro-enteritis, produced by the fall, and terminating in perforation of the stomach. Our readers will remember that the whole story of the fall and of her subsequent illness was fabricated for the purpose of deceiving the insurance companies. The evidence proved that she had been in excellent health up to the time of her death, and that just before she was taken ill she had dined heartily on vegetables.

Thirteen days after her death the body was exhumed under the superintendence of M. Tardieu, Professor of Legal Medicine and Dean of the Faculty of Medicine in Paris. The body and external organs were in a state of perfect preservation—so perfect that had any lesions, the result of previous disease, been present, they would have been at once recognised. The results of the autopsy were entirely negative. The heart was unaltered in size, and its valves acted perfectly. The blood was semi-coagulated, but there was an absence of clots. The lining membrane of the stomach was perfectly healthy, that of the intestines presented some sanguineous infiltrations, but they were few in number.

The deceased was advanced seven or eight weeks in pregnancy. The chemical analysis, which was conducted by M Roussin, was made by obtaining alcoholic and watery extracts of a portion of the stomach and intestines. The solid residue exhibited no trace of mineral poison, neither was any organic poison which could be isolated obtained from the extracts.

Shavings of the floor of the apartment on which the deceased had vomited were also procured, and for the purpose of comparison, shavings from the floor of a different part of the room. From the former, sixteen grammes and a half of alcoholic extract were obtained. This had a brown color, a peculiar rancid and oily odor, and a very bitter taste. On incineration it left no metallic residue; it was precipitated abundantly by tannic acid; the addition of sulphuric acid turned it of a reddish purple color, and hydrochloric acid produced a green tint. The extract of the shavings which were unsoiled by the vomited matters had an aspect and odor closely resembling the preceding, but it had no bitter taste, it was not precipitated by tannic acid, and only slightly colored by sulphuric and hydrochloric acids; the tints struck by these acids were entirely different to those produced in the former extract.

It was clear that this result proved nothing as to the existence of poison. The change in color produced by sulphuric acid, and the precipitation by tannic acid, are reactions common to many organic matters, and, as was observed by M. Hébert, the green color which followed the addition of hydrochloric acid would have been a more important indication had the chlorophyll of the vegetables (cauliflower and sorrel) which she had eaten, and the green coloring matter of the bile, been previously removed. In the failure of their chemical investigation, therefore, the experts had recourse to physiological experiment.

The first trial was made with the extract obtained from the shavings of the floor on which deceased had vomited. At five minutes past one a dog was inoculated with five grammes of this extract, introduced by two incisions on the inner surface of the thighs. At half-past three, the animal vomited thrice. The vomited matters were glairy and bilious. The pulse, which at the commencement of the experiment was 110, had fallen to 94; it was irregular and intermittent. The beat of the heart was irregular and intermittent, at times appearing to cease suddenly, and then becoming rapid. The respirations were slightly intermittent. At half-past four the heart-beats fell to 76, and the animal again vomited. At eight in the evening it could stand with difficulty. The slightest movement appeared painful, and provoked vomiting. The heart beats were still irregular, and 68 in the minute. At eight the following morn-

ing the animal was cold, but sensible. The heart-beats were less strong, and had fallen to 40. Their irregularity and intermittence were very remarkable. Respiration was jerking and intermitting. The animal died at eleven o'clock, apparently without pain. There was no coma. The examination of the body was made two hours after death. The ventricles of the heart were markedly contracted, although the auricles were dilated. All the cavities of the heart were filled with black, thick and partly coagulated blood. On removing the pericardium some elevations of a vivid red color were observed on the surface of the heart near the apex.

2nd Experiment.—Two grammes of the same extract were administered by the mouth to a rabbit. Great irregularity of the heart's action ensued. The beats fell to 41 in a minute. The animal died in two hours and three-quarters from the administration of the extract. The cardiac auricles were found dilated, the ventricles contracted, the latter strongly contrasted by their blackish color with the rest of the organ. The interventricular space was remarkably depressed. The apex of the heart was of a vivid red color, and the walls presented several red elevated spots.

The third experiment was one made for the sake of comparison with the extract obtained from the shavings of the floor, on which the vomited matters had not fallen. Four grammes of this extract were administered to a rabbit. It did not vomit, nor was it in the least incommoded, and two days afterwards it continued in perfect health.

The fourth experiment was made with alcoholic and aqueous extracts obtained from the stomach and intestines of the deceased. Five grammes of a mixture composed of equal parts of these extracts, were introduced into an incision made on the inner surface of the thigh of an adult vigorous dog. At three o'clock the animal's pulse beat 102 in a minute. At half-past four it seemed depressed, anxious, it respired with difficulty, its pulse had fallen to 86, and the heart's action was irregular and intermittent, but less so than in the case of the dog experimented on with vomited matters. The animal vomited twice. At eight in the evening the pulse had fallen to 55, and was manifestly irregular and intermittent. Respiration seemed difficult. The animal frequently changed its position and uttered half stifled cries; it retained its intelligence. The following day, at half-past eight in the morning, the beat of the heart had risen to 70 pulsations in the minute; the general condition of the animal was improved, and it ultimately recovered.

The fifth experiment was also made with the extracts of the viscera. Four grammes were administered to a rabbit, which died in a few

minutes. The experimenters thought that its rapid death was owing to some accidental complication—perhaps syncope—having hastened the action of the poison.

The sixth experiment was performed on three frogs. After having laid the heart bare in each, and observed that the pulsations in the three were perfectly equal, the experiment proceeded as follows:—

1. The first frog was left in the normal condition, care only being taken to preserve the humidity of the heart.

2. The second frog. Six drops of a solution containing one centigramme of digitaline in six grammes of water were injected under the skin of the belly.

3. The third frog. Fifty centigrammes of the extract made from the shavings of the floor on which the vomited matters had been spilt were injected under the skin of the belly.

The following variations in the number and beats of the heart were observed in the three animals:—

Minutes.	No. 1. Pulsations.	No. 2. Pulsations.	No. 3. Pulsations.
After 6	42	20	26
“ 10	40	16 irregular	24 irregular.
“ 20	40	15 id.	20 id.
“ 28	38	0	12 very irregular.
“ 31	36	0	0

This experiment was repeated several times with the same result.

The experts relied on the first experiment as proof of the fact that the vomited matters contained poison. The third demonstrated that the poison did not previously exist in the floor of the room. The fourth was held to prove that the stomach and intestines of the deceased contained the same poison, but in less quantity than the vomited matter, the dog having recovered from its effects. The sixth experiment on the frogs was instituted to demonstrate the nature of the poison used. The experimenters did not consider it of the highest importance, but it corroborated the former ones. It pointed to that group of organic poisons which are known especially to affect the heart's action, and heightened the probability that death had been caused by digitaline. The report of M. Tardieu drew a comparison between the symptoms exhibited by the first dog and those noticed in the last illness of the deceased. In both there were repeated and violent vomitings, and rapid loss of power. In both the pulse was irregular and intermitting; in both the heart's action was tumultuous and irregular, apparently ceasing at times, until it was finally suppressed. The following were the conclusions of the report:—

1. Madame de Pauw died from the effects of poison.

2. The poison which killed her was one of those vegetable poisons which do not leave characteristic traces in the organs of the body, nor can they be isolated by chemical analysis. They reveal their presence by their effects, and are detected by their deadly action on living beings.

3 We obtained from the vomited matters and the organs of deceased submitted to analysis a very energetic poisonous principle which when administered to animals, produced analogous effects to those observed in Madame de Pauw, and killed them in the same manner.

4. These effects and this action have a strong resemblance to those of digitaline, and without asserting it as a fact, there is a strong presumption that Madame de Pauw was killed by that agent.

5. That deceased was not really ill before the day which preceded her death.

6. The post-mortem examination proved that death was not caused by the effect of a fall, nor by an internal hemorrhage, nor by an acute or chronic gastro-enteritis, nor by a perforation of the stomach, nor by any natural cause.

We have now to examine the criticisms on the report of MM. Tardieu and Roussin, offered by M. Hébert, the expert employed for the defence. The first point noticed by M. Hébert was, that the unusual preservation of the body, as poisoning by any mineral substance was out of the question, did not favor the idea of poisoning. He next asserted that neither the chemical nor the physiological experiments made with the shavings of the floor on which the vomited matters had been spilt, were of any force. The objections to the physiological experiments were the following: The extract of the vomited matter contained organic matter in a state of decomposition, sufficient of itself to produce toxic effects. The dog in the first experiment exhibited a gradual and progressive retardation of the heart's action, and after death that organ was found in a state of contraction. There are two reasons for believing that death did not result from digitaline—the first, because MM. Bouley, Reynal, Delafond, Dupuy, and Stannius, have found that digitaline in small doses retards the heart's action, but accelerates it if given in considerable doses. Secondly, that in poisoning by digitaline, the heart, instead of being contracted, is dilated and gorged with blood.

With regard to the state of the heart, the same objection applies to the rabbit used in the second experiment. The rabbit, also being an herbivorous animal, was one of the worst which could be selected for an experiment with digitaline, for MM. Homolle and Quevenne have demonstrated that herbivora, and rabbits especially, are refractory to the action of di-

digitaline. The dog submitted to the fourth experiment was only indisposed; it did not die, much to M. Hébert's surprise, for there had been injected into its subcutaneous cellular tissue alcoholic and watery extracts of the viscera of a person who had been dead a fortnight. Although the parts were in a remarkable state of preservation, it could not be alleged that no process of decomposition had taken place in that time, and the known facts of poisoning by decomposing animal matters completely account for the phenomena observed. With regard to the frogs, M. Hébert observed that these animals were worse chosen than the rabbits, because, according to Stannius, they are exceedingly refractory to the action of digitaline. M. Hébert was astonished at the statement that the number of cardiac pulsations was perfectly equal in the three animals, because in experiments made by him he had found notable differences. The preliminary operation to which they had been submitted, consisting of raising the skin, the abdominal muscles, and sternum, in order to bare the heart, would suffice by the hemorrhage and shock produced to sensibly alter the action of the heart and to diminish the number of its pulsations. In the first frog experimented on by the experts, the pulsations had fallen from forty-two to thirty-six, whilst in one experimented on by M. Hébert they had fallen in thirty-one minutes from fifty-seven to forty-three. M. Hébert expressed himself surprised at the result of the experiment on the second frog, because he had made similar experiments with a solution of exactly the same strength. One frog had received thirty-six drops in six injections without any inconvenience; a second received fifty drops in one injection, and was but slightly indisposed, and soon recovered.

Two other objections were especially urged by M. Hébert. One was that the experts had not, for comparison, poisoned a dog with digitaline in the same manner that the dog was poisoned with the extract of the vomited matters. The other was that they had not repeated the experiment on the dog which recovered by administering a stronger dose of the extract derived from the stomach and intestines. M. Hébert concluded by insisting on the following points:—1. That there was no chemical evidence of poisoning. 2. That the experiments made on animals not only were insufficient to demonstrate the presence of digitaline in the vomited matters, but, on the contrary, proved positively that the vomited matters did not contain it. 3. That no animal was poisoned by the extract of the organs of the deceased, and that the symptoms observed in the dog inoculated with it were attributable to the action of putrefied organic matter. He concluded that the existence of poisonous matter supposed to be digitaline had not been demonstrated, and that the facts alleged

in the report of the experts did not prove that the deceased had been poisoned.

It will be observed that M. Hébert limited his attack on the evidence given by the experts to what we believe to have been the most vulnerable point in their report—the physiological experiments. He left entirely unnoticed the symptoms which had been observed before death, and the entire absence of natural disease revealed by the autopsy of the deceased. The objection to the report, founded on the state of preservation of the internal organs of the body, was answered by the statement that the experts did not rely upon that condition as any proof of poisoning, but simply as enabling them to pronounce definitely as to the non-existence of previous disease. The assertion that the extract obtained from the viscera really contained organic matter in a state of putrefaction was met by the statement that the matter with which the dog was inoculated was not the mere *debris* of the organs themselves, but was the product of the treatment of the organs with alcohol at 95 °, and with boiling water, and subsequent filtration and evaporation. The objection that a second dog had not been poisoned by digitaline was answered by the assertion that the experimenters had not thought it necessary; their conviction was complete. Moreover, that the readiness with which a dog vomits was a reason for not administering to that animal digitaline by the mouth. The only way to obviate immediate vomiting was by tying the gullet—an operation which was now allowed to have thrown doubts on the results of all Orfila's experiments. We may observe, however, that this was no answer to the objection that digitaline had not been introduced into the subcutaneous cellular tissue. Another objection, that a larger quantity of the extract of the stomach and intestines had not been given to the dog which recovered, was met by the assertion that the dog was poisoned, although it did not die. Its pulse fell from 100 to 50. It was clear that the poison existed in less quantity in the viscera than in the vomited matters. In answering the objections derived from the action of putrefying substances, M. Tardieu referred to a paper by M. Reveil, now before the Academy, which the writer supposes to have established the fact, that, contrary to the observations of Orfila and other authors, no poisonous substance, such as the cyanide of ammonium, separable by solvents or distillation, is formed during putrefaction. It need scarcely be observed that such an unsupported assertion, derived from a document not in court, would not have been received as evidence in England.

After a long discussion between the experts for the prosecution and M. Hébert in reference to the extract from the soiled shavings, the lat-

ter limited his position to the following assertion:—"That the product had caused the death of the dog inoculated with it, but that the death was not such as digitaline would have produced; and that, instead of concluding digitaline was present in it, we ought logically to conclude that it was not."

An objection was also made to the evidence derived from the shavings of the floor, on the ground that the apartment had been previously occupied by a photographer, and that some of the chemicals used in his business might have fallen and remained on the floor. The matters, examined however, were found to have been recently spilt. The photographer had not occupied the apartment for three months previously. Analysis gave no evidence of a salt of silver or of any mineral substance, whilst such substances as the cyanide of potassium, which are used in photography, would have become long before decomposed.

The evidence of MM. Claude Bernard, Vulpian, Bouley, and Reynal was taken on the question raised by M. Hébert, whether after poisoning by digitaline, the heart was contracted as asserted by the experts, or dilated as stated by M. Hébert. M. Claude Bernard stated, as the result of his experiments, that in the higher animals, when poisoned by digitaline, there is at first agitation, then after some hours, death takes place suddenly, as if from syncope. A particular characteristic of poisoning by this substance is that immediately after death red arterialised blood continues to be poured into the left cavities of the heart, because respiration continues after the complete arrest of the cardiac pulsations. Death, therefore, occurs from the cessation of the heart's action, and at first the organ is dilated by the blood which continues to flow into its cavities. But cadaveric rigidity follows much more rapidly in the muscular structure of the heart than in the other muscles of the organism. Contraction of the ventricles, therefore, rapidly replaces the dilatation, and in the course of a very few minutes they empty themselves of the blood which has been poured into them. A quarter of an hour after death the state of contraction is clearly manifest, and the rigidity continues. In answer to questions put by M. Hébert, M. Claude Bernard said that there was nothing in the condition of the dog poisoned in the first experiment which appeared to him to contra-indicate the idea of poisoning by digitaline. But the experiment would have been more convincing had the autopsy been made a few minutes instead of two hours after death. In his experience there is often in poisoning by digitaline at first an acceleration of the heart's movements, but that finally retardation sets in, and continues to increase until complete arrest terminates life.

M. Vulpian's evidence referred to the effect of digitaline on frogs. He



dissented from the statement of Stannius that digitaline did not affect batrachian reptiles. On the contrary, he found that the action of digitaline was most powerful on frogs. When injected under the skin it produced in a few minutes manifest changes in the movements of the heart; the auricles begin to contract somewhat irregularly, but the movements of the ventricle are especially affected, they contract with great irregularity, certain points of the ventricle appearing to escape the general movement; at the same time the pulsations become slower and slower, and after some minutes the heart becomes motionless. The ventricle stops first and remains empty, pale, and contracted, the auricles continue for a short time to act, but too feebly to force the blood into the ventricle; they remain fully dilated after the contraction of the ventricle. There is also this peculiarity observed, that even after the arrest of the heart's action the frog will continue to leap about with but little less vivacity than in the normal condition. There are several other poisons which act in the same way as digitaline when introduced under the skin of the frog; these are, the poison of the toad and of the aquatic salamander, *Upas antiar*, alcoholic extract of *Tanghinia venenifera*, and watery and alcoholic extracts of the *Veratrum viride*. M. Vulpian concluded by stating that he had tried other vegetable poisons and tannin, and had never observed analogous phenomena.

The experiments of MM. Bouley and Reynal had been made with digitaline on horses. They had never observed the cardiac ventricles contracted. On the contrary, the heart had always appeared flabby; but as the examinations were made five or six hours after death this might have been due to the commencement of putrefaction, which takes place much more quickly in herbivora than in carnivora, especially after death by the vegetable poisons.

The only other point to be noticed is that La Pommerais had endeavoured to explain the great diminution in the quantity of digitaline found in his possession by saying that he prescribed it externally as well as internally, and that besides furnishing it to his patients, he had distributed it to students who were his pupils. He said he had also sent a quantity to his brother-in-law, a chemist, in the country, who had the packet still in his possession. The packet was subsequently produced, and submitted to analysis by M. Roussin. Analysis showed that if digitaline was present at all it was in infinitesimal proportions. The contents of the packet consisted of sugar of milk.

In concluding an article, the length of which is only justified by the scientific importance of the trial, we shall offer but few comments. As we have said, we believe the guilt of the prisoner was entirely proved,

but we regard the evidence of the experts (we refer to their experiments) although confirmatory, and on the whole, satisfactory of its kind, as the least portion of the proof against him. We should be sorry, in the present state of science, to see a conviction for murder on such evidence alone.

A writer in a French journal has criticised the report of MM. Tardieu and Roussin on the ground that it descended too deeply into minutiae, and as, for instance, in noticing the contracted condition of the heart, invalidated their conclusions by raising points on which a critical defence could seize. We do not sympathize with the objection. If a man's life depends on a physiological experiment, for Heaven's sake let the minutest particulars be observed and noted, whether they weigh in the scale of guilt or innocence. A more valid criticism appears to us to have been that it would have been better to avoid experiments on animals so remote in the zoological scale from Man as rabbits and frogs. We are, however, most ready to confess that, considering the great difficulties under which the investigation was conducted, it was performed with surpassing skill and sagacity. We only wish that all the great Medico-legal inquiries which have taken place in this country were as creditable to British science. But whilst thus expressing our appreciation of the performances of the experts, we are bound to add that never were we more impressed with the superiority of English judicial proceedings than when reading the reports of this trial. The debates—we had almost said altercations—between the experts for the prosecution and defence would have been scarcely tolerated in an English Medical Society, much less in a court of justice; whilst the frequent interruptions, the loose reception of evidence, the attacks of the judge on the prisoner, and his mode of detracting from the value of the evidence, offered by the defence, contrast most strongly with the order, the careful sifting of evidence, and the even-handed fairness which are the characteristic features of our own legal tribunals.—*Medical Times and Gazette*.

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## Medicine.

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NECRÆMIA, PIARHÆMIA, GANGRENE, AND GAS IN THE VEINS.

By S. FLEET SPEIR, M.D., Brooklyn, L.I.

Patrick Wright, æt. 44 years, of good constitution. Admitted to Brooklyn City Hospital Oct. 6, 1863, for compound comminuted fracture of the leg. Service of Dr. J. M. Minor.

The patient was engaged hoisting sugar, when a slack hawser, suddenly made tight, struck his left leg in its upper third, producing extensive comminution of the bones, and laceration of the soft parts. Amputation was advised, but the patient refused to have it performed. On the 7th he desired amputation, and at twelve o'clock m. Dr. Minor amputated at the "place of election," and the patient rallied pretty well after the operation. Three hours after amputation, pulse 114 and feeble; skin cool and face pallid; patient inclined to sleep. Ordered whiskey and beef-tea. Oct. 8th.—There was a dark discoloration of the thigh on its posterior aspect; at ten a.m. pulse 108 and quick. Oct 6th.—Considerable sloughing of the stump, and the discoloration on the back of the thigh, pits on pressure; the veins are much dilated and prominent; resonant percussion extending up the thigh of the affected limb. At ten a.m. pulse 90, feeble; skin moist; patient had two chills, one at two p.m. and another at ten p.m.; had more or less delirium during the day; would start up and desire to go home. Oct. 10th.—Was delirious and uneasy; much excited during the afternoon and evening. At half-past eight p.m. after one of his periods of excitement, he fell back, and died in a few minutes.

Oct. 11.—*Post mortem examination 15 hours after death.*—Body well formed; rigor mortis not well pronounced; the body was everywhere more or less resonant on percussion, due to the distension of the veins by gas, a large collection of which had accumulated in the superficial veins, giving them great prominence. A part of the cephalic vein was tied at two points, and removed with its contained gas, after which the distension of most of the veins in the neighborhood disappeared. The stump presented a bloated gangrenous appearance, and on being opened, foul gas and ill-conditioned matter escaped. *Thorax*—Lungs normal; heart eleven ounces, flabby; the veins upon its surface were distended with gas; clots in both sides of the heart. The blood contained in the blood-vessels was fluid and foamy, from the development of gas; it had a peculiar carmine color, and was loaded with oil. In the heart and large vessels the blood separated into two distinct portions, the supernatant layer consisting of clear, yellow oil, and the subjacent portion presenting the appearance of fluid venous blood, of a lighter color than usual. From a rough examination, it was thought that about one-fourth part of the liquid contents of the veins consisted of oil. The liver weighed four pounds eight ounces, and was waxy; gall bladder contained black bile. The kidneys weighed four and a half and six ounces, waxy; in one of them was a small cyst containing a yellowish fluid. Spleen weighed five ounces; appeared healthy. Upon microscopical examination, the liver and kidneys were found to be waxy; the other organs were normal. *Blood*—The blood

contained granules of hæmatoidine; its corpuscles were larger than usual; colorless corpuscles with one, two, and three nuclei, were abundant; the greater part of the field was covered with crystals of margarine, stearine, and free oil globules. On adding ether to a portion of the blood, the oil was entirely dissolved.

From a cursory examination, one would be inclined to consider this as a case of ordinary gangrene attacking the stump; but, after a more thorough investigation its pathology is found not to be so readily arrived at, and it proves to be a case of more than ordinary interest, and worthy of further consideration. The most striking features of the case are, mortification, and the occurrence of gas and oil in the blood-vessels. Mortification of itself is not uncommon after severe injuries and operations—especially now-a-days. Neither is the collection of gas in the blood-vessels or connective tissue rare in such cases, but I believe the presence of so large a quantity of oil in the blood, constituting a true pathological piarhæmia, is very rare under any circumstances, and the occurrence of these three conditions together is still more remarkable.

I conceive of two ways of solving the pathology of this case. First by considering mortification, caused by a loss of vitality in the tissues of the injured limb, from the shock of the injury, from inflammation or otherwise, as the first of the train of accidents occurring after the infliction of the injury; this was soon followed by the generation of gas, from decomposition going on in the mortified parts; the gas being carried into the circulation through the medium of the veins, produced decomposition of the blood—piarhæmia and necræmia.

Or, secondly, to look upon the shock from the accident, from the operation, or both as producing primarily a disorganization of the blood. According to this theory we shall have the orders reversed; first necræmia, and as a consequence, the generation of gas in the blood-vessels from decomposition of the blood itself; then follow piarhæmia, and lastly gangrene. Comparing them in order, we have according to the first, mortification, generation of gas (from the tissues), piarhæmia, and necræmia. In the second, necræmia, generation of gas (from the blood), piarhæmia, and mortification.

In accordance with the microscopical examination of the blood, and from the fact of the gas being observed to occur first in the veins, and only secondarily and but slightly affecting the connective tissue, I conclude that the latter theory is correct, and explains the true pathology of this case; in fact, "death began with the blood," and the other conditions followed as necessary results. The cause of the disorganization of the blood, I think, must be attributed to the shock—either from the

injury or from the amputation. Among the causes of necræmia, German pathologists mention violent convulsions, overwhelming emotions, the shock from an amputation, a stroke of lightning, and even a severe exhausting labor. The shock then, was quite sufficient to account for the death of the blood. This being admitted, we can readily understand how gas may be generated by the decomposing blood, and thus account for its accumulation in the bloodvessels. It is not so easy, however, to account for the occurrence of piarhæmia.

We are all aware of the physiological piarhæmia, the result of digestion, pregnancy, lactation, and hibernation. About two hours after the ingestion of ailment the serum is found to be turbid, opalescent, and semi-opaque, a transitory condition which is due to the absorption of the fatty matters of the food formed into an emulsion by the pancreatic juice, and absorbed as such in the duodenum. The microscope shows this condition to be due to the presence of a large number of fat globules and of molecular granules of albumen. According to Christison, the passage of the chyle into the blood renders the serum turbid; this turbidity lasting until the insoluble fatty matters, oleine, stearine, and margarine, enter into combination with the free soda of the blood, and become converted into oleic, stearic, and margarie acids. That the case under consideration was not a case of *physiological piarhæmia* is evident from the fact of the patient having taken very little food for some time, as well as from the absence of the peculiar lactescent appearance of the serum usual in such cases. There is, however, a *pathological piarhæmia*, the result of certain diseases. It has been noted in diabetes, chronic alcoholism, dropsy, jaundice, nephritis, hepatitis, pneumonia, and especially Bright's disease.

Various explanations have been given of the occurrence of fatty blood in disease. Dr. Babington regards piarhæmia as a fatty degeneration of the albumen of the blood. Robitansky thinks it is often due to fatty degeneration of the colorless corpuscles, which are previously formed in excess, so that it is to be regarded as a modification of leucocythemia; but he also admits the direct introduction of fat into the blood, and the liberation of combined fat contained in it to be possible causes. Virchow regards it as dependant upon the non-combustion of fat and its consequent accumulation in the blood; while he considers the presence of molecular albumen to be only a secondary phenomenon, the slow saponification of the excess of fat abstracting from the albumen of the blood the alkali required to keep the latter in solution. These explanations are all plausible, and may each be applicable in some instances; but in the case before us, the microscopical examination would not warrant us in supposing that

any of the constituents of the blood were undergoing fatty degeneration. I think Raspail gives the explanation most applicable to this case. He maintains that fat is set free in the blood for want of a free alkali to hold it in the form of a soap. The fatty matters may have entered into the blood along with the chyle through the thoracic duct, or it may have been elaborated in, and absorbed directly from, the liver; in either case it is very probable, from its present appearance, that some of it at least was once in combination with the alkali of the blood.

In consideration of the facts elicited by this examination, I present this as a case of necræmia from shock.—*American Medical Times*.

ON A CASE OF TAPEWORM (*TÆNIA MEDIOCANELLATA*,) SUCCESSFULLY TREATED WITH OIL OF MALE FERN.

By EDWARD HART VINEN, M.D., F.L.S.

As I consider every instance in which tapeworm has been successfully treated, with the means by which its removal was effected, deserves to be recorded, I forward for insertion in *THE LANCET* the following case, in which two small doses of the oil of male fern were sufficient to effect a cure:—

In July of last year, I was consulted for a little boy eight years of age, who, I was told, had for a long time previous been in the habit of passing large portions of tapeworm. The first time this was noticed was in the previous November, (1862), which induced his mother to apply for advice to a medical brother living in Scotland. He recommended decoction of pomegranate bark, which was administered frequently, and always with the effect of bringing away considerable portions of the worm; but as the remedy only gave partial relief, the mother consulted me.

As the child was very delicate, I prescribed a small dose—twenty-five minims—of oil of male fern, in mucilage, with peppermint water, to be taken at bedtime, and followed by a dose of castor oil in the morning if necessary. The result was that a large portion of the worm was expelled; but I looked in vain for the head, although from the appearance of the upper segments it was evident that the separation had taken place not far below it. At the end of a week I gave a second dose of the oil, the same strength as the first (viz., twenty-five minims), with a most successful result, for the head was expelled the next day.

My own impression was that this worm was the ordinary *tænia solium*; but on showing it to my friend, Dr. T. Spencer Cobbold, he pronounced it to be the *tænia mediocanellata*, which is generally considered to be of

much less frequent occurrence than the former, and more difficult to remove.

Küchenmeister says that "the touchstone of a remedy for tapeworms is not whether it expels bothriocephalus latus or tænia solium, but whether it is also capable of effecting this with tænia mediocanellata." And he considers oil of turpentine to be the remedy *par excellence* for tapeworm; and that the oil of male fern is insufficient, and its action uncertain. As far as this case goes, however, it militates against such an opinion; for the remedy was given without any previous preparation, and in the first instance only was it followed by a small dose of castor oil.

Since passing the head of the worm the little boy has improved in health and appearance, and, I need scarcely add,—has had no return of his previous symptoms.—*Lancet*.

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#### AN OUNCE OF QUININE ADMINISTERED BY MISTAKE.

We most readily give insertion to the following letter, which has been placed at our disposal by Dr. Clapton, of St. Thomas's Hospital:—

DEAR DR. CLAPTON,—It has often been a matter of reflection to me how imperfect is our knowledge of the action of the various substances employed in medicine, when used in health and in disease, and how greatly this branch of Medical science needs improvement. I am brought to admit that the reason proceeds, on the one hand, from the complicated state of our organization, in consequence of which the effect is modified by the simultaneous influences of many organs, and by a variety of circumstances not under our control; and that, on the other hand, there is still a great want of acquaintance with the properties, and I dare say, with the affinities of the various substances to the organs and tissues of the human frame.

The first difficulty may certainly be almost insuperable; the last imposes on each of us the duty of communicating to our Medical brethren what may be of interest to them, especially in regard to those remedies most commonly employed. This same consideration influences me in transmitting to you a singular fact which occurred here lately. It is as follows:—

Dr. Hayler, a military Medical man, visited in barracks a soldier, suffering from a relapse of ague, and administered to him a small dose of sulphate of quinine. At the same time, he directed a man to fetch one ounce of the same remedy from the Hospital, in order that he might have it in readiness for any emergency. The man received the bottle;

but, supposing that it was ordered for the patient just mentioned, he took it to him. In the presence of their comrades, they put the whole into a cup, adding sufficient water to make a paste of it; and the patient, although he found the medicine uncommonly bitter, did not leave off until had taken it all.

Dr. Hayler, on learning that this enormous dose had been taken, at once visited the patient. The most careful investigation left no doubt of the fact; but, with all that, *incredible dictu*, except a complete deafness and a kind of stupor, no other bad effect ensued, and no antidote was administered. He was directed to the Hospital, where he remained a week under observation, and left the establishment in the best state of health. The ague disappeared, probably never to return. I saw the man myself; he is a Swiss, named Albitz, aged 30, of small stature, and of a strong constitution.

It was not to be supposed that there was any important adulteration of the remedy in question, as all these preparations are subject to a chemical investigation before they are admitted in the Hospital Dispensary.

Now, I do not intend to discuss the various points in respect of which this case offers a peculiar interest, leaving the application of it to yourself. I merely hope that its publication may tend to diminish the popular prejudice still existing against this powerful and highly important remedy,—a prejudice which sometimes prevents us from using it. Professional men and patients may both learn once more how often symptoms, which we are so frequently led to consider the effect of quinine, ought rather to be attributed to the malady itself than to the medicine employed.

It would certainly be a difficult matter in this case to determine how much of the entire ounce was absorbed, and brought into circulation. A most careful inquiry as to the excreta for several days following its assumption would have facilitated an approximation of the amount. As this examination was not made, we can only infer, from the slight symptoms experienced by the patient, that a portion only of the quinine was absorbed. Though therefore I would not willingly encourage larger doses than we usually give, we may still feel induced by the present case to administer moderate doses in various affections besides ague, where the use of quinine is indicated. As for instance, in remittent fevers, we need not wait too anxiously till evident intermission, remembering the *ocasio præceps*; so in certain cases of typhoid fever, and in acute rheumatism, we may, perhaps, more frequently try it, less deterred by the fear of increasing a supposed inflammatory condition, or of promoting severe nervous excitement. I recollect some cases of phthisis pulmonalis where



I gave daily a few grains of quinine, guided by the observation that the fever in these individual instances was in proportion to the local disease.

I am afraid, dear Mr. Clapton, I have taken up too much of your valuable time by giving you so long an account. Make what use of it you think proper, and shorten it as you please, only let the fact be known.

I am, &c.,

DR. TAUSSIG.

Rome, December, 1863.

#### ON A CASE OF POISONING BY ARSENIC.

By C. W. BINGLEY, Ph. D., F. C. S., Lecturer on Chemistry to the Sheffield School of Medicine.

*In cases of death from arsenic, what evidence can a post-mortem examination and analysis afford, either as to the probable quantity taken, or the period that may have afterwards elapsed before death took place?*

The following are the particulars of a case I have lately been retained in, suggestive of the above inquiry. Charlotte P——, of Crowle, in Lincolnshire, a married woman, between thirty-five and forty years of age, died suddenly. At the inquest, the evidence was, that a neighbor saw her in her own house about five o'clock in the afternoon previous to her death, sitting by the fire-side. She appeared to be ailing. The witness asked her what was the matter, but the deceased was unwilling to say much, and only replied "she did'n't know." Soon afterwards the witness left her. The next morning, about six o'clock, deceased's husband called her into his house, when she found his wife had died. The husband, a laborer, on being examined, said that he had been out drinking; that when he got home it was late, and he found his wife in bed and ill. He said he was drunk, but he got her some tea, and directly she took it she was sick, and vomited. She vomited twice.\* She got out of bed, and was seized with cramp in the legs, and got back into bed. She asked him to lift her in; whilst doing so she kissed him, and said it would be the last time he would ever have to do it for her. He went to sleep. About five o'clock when he woke, he found his wife dead. He had no one to assist him with his wife during the night. No evidence could be obtained of any poison having been bought by, or seen in the

\* The vomit had been thrown away, and was not to be recovered when I inquired for it afterwards.

possession of either the deceased or her husband, nor were the remains of any to be found. The only druggist in the town who sold arsenic denied having ever supplied either the deceased or her husband with any. It was stated that deceased and her husband frequently quarrelled, and that he was a very intemperate man. The general belief amongst the neighbors, however, was that she had died from natural causes, or if from poison that she had taken it intentionally. The medical man of the place was of opinion that she had died from natural causes. Mr. Holgate, the coroner, however, adjourned the inquest, and ordered that in the meantime Mr. Moxon, of Kirton Lindsay, surgeon, should obtain the viscera of the deceased, and send them to me for analysis.

I accordingly received the a stomach, portion of the small intestines and contents, the gall bladder, and a portion of the liver of the deceased. The result of my examination and analysis of them was, as stated at the adjourned inquest, in substance as follows—viz., I found the stomach to contain four fluid ounces of a mucous liquor tinged with blood of a dark color; blood of a dark color suffused between the rugæ; no ulceration nor perforation of the coating of the stomach; but the whole presented an inflamed condition, and was of a dull reddish-brown color, that became brighter after exposure to the air. The small intestines were inflamed, especially that part of the duodenum adjoining the pylorus. No specks nor pasty patches of arsenic could be detected either in the stomach or intestines. The gall bladder was full of gall. The liver was uniformly of a brownish-red color, and presented no appearance of inflammation. On analysis, I discovered arsenic. The distillates with chlorhydric acid from each of the respective portions furnished, by the usual methods, tersulphide of arsenic equivalent to the several quantities of arsenious acid following—viz: The stomach 0.86 grs.; contents of ditto, 0.02 grs. A portion (nearly half) of the small intestines emptied, 1.04 grs.; contents of ditto (eight fluid ounces,) a trace only. The gall bladder and gall, 1.13 gr. A portion (not quite half) of the liver, 4.15 grs.

From the fact of my finding so small a portion of arsenic either in the stomach or intestines and their contents, compared with so much larger a quantity in the liver, the question suggested itself whether the deceased might not have had the arsenic administered to her, presuming in that case it had been exhibited in a smaller dose than a person with suicidal intent would have taken it, and that it had been given some rather more considerable length of time previous to death, so as to have admitted of its absorption to the extent I found had taken place in the liver.

The cases recorded of arsenical poisoning are exceedingly anomalous as

to the effects and symptoms exhibited. I could find none that I could apply in this case; and, in the absence of any other evidence to explain how or when the poison had been obtained and dealt with, could form only a speculative opinion on a point that might implicate a second party.

The verdict therefore was, "That the deceased had died from the effects of arsenic; but whether administered to her by any one, or that she took it herself, there was no evidence to show."—*London Lancet*.

PARALYSIS OF ALL PARTS BELOW THE NECK—DEATH—AUTOPSY—  
MALIGNANT DISEASE OF CERVICAL VERTEBRÆ.

This case is of great interest in several ways. In the first place, the diagnosis of cancer was difficult, as there was no prominent symptom beyond the paralysis. It is true that there were pains in the shoulders; but these were not definite enough to lead to any certain conclusion, and, indeed, were, before he came to the Hospital, taken for rheumatism. It is only when pain follows the course of some definite spinal nerves that it can be of much use in helping us to locate disease in the spine. We have recently seen several cases of paraplegia in which the cause of the paralysis was cancer of the spine, and yet was not diagnosed during life. The sudden onset of paralysis is not likely at first thought to countenance the diagnosis of cancer; but we must remember that, although it may have been growing in the bones of the spine a long time, it may, as in Dr. Black's case suddenly invade a part of the cord, the anterior columns, where are collected in a small space the motor fibres of the muscles of the four limbs and of the trunk.

It is said in the report of the case that the effect on the cord—*i.e.*, on the anterior or motor columns—was apparently the result of pressure only. It is certainly singular that there should be so much paralysis, and yet so little apparent damage to the cord. But this is very commonly so. In a case lately in Guy's Hospital, a patient had paralysis (of motion only) in both legs. He died; and at the autopsy, although at one point there was found cancer of the bones of the spine, yet the cord looked healthy, and nothing morbid was found in it by recent microscopical examination. In all such cases, however, it is necessary that a careful examination should be made on Lockhart Clarke's method after the cord has been hardened in chromic acid. This method would clear up many obscurities. Indeed, we may say without exaggeration that Lockhart Clarke's researches open out quite a new field—not in the physiology of the Nervous System only but in its pathology too.

*History*—David B., aged thirty-five, had been out of health for about ten months, suffering from pains, supposed to be rheumatic, in the neck and shoulders. These were at times greatly relieved by Turkish baths. About three months before his death his figure began to alter, the neck becoming shorter and thicker, so that he could no longer button his shirt-collar; but he was able to continue at his work as a clerk in Pickford's warehouse up to one month before his death, complaining, however at times of difficulty in guiding his pen. On the evening of Tuesday, February 23, he had a Turkish bath, but the pains, which had become very severe, were aggravated rather than relieved by it, and he passed a very bad night. The following morning, February 24, whilst at breakfast he suddenly found himself unable to raise his cup to his mouth with his right hand, and on attempting to walk into his bedroom he found he had lost almost all power in the left leg. He was then brought to the Hospital, and the loss of power soon became complete and universal in the limbs and trunk; but the sensibility remained perfect up to within a few hours of his death, if not to the very last. He died somewhat suddenly, after an agony of about two hours, of dyspnœa.

*Post-mortem.*—Body sparely nourished; still slightly warm; posteriorly somewhat livid. Rigor mortis present in muscles of lower jaw; the limbs flaccid. Head—The only appearances noticed were, that the scalp was slightly adherent; the vessels of the pia-mater somewhat minutely injected, and a small bony mass in the falx cerebri. The ventricles contained about the normal quantity of fluid. Spinal cord and its membranes were apparently healthy, except opposite the second and third cervical vertebræ and the corresponding interstitial cartilages. Springing from the bodies of those vertebræ with which it is intimately connected, and which are partially destroyed by it, the cartilages having suffered in a less degree, is a tumor the size of a walnut, by which the cord is greatly compressed, and softened apparently throughout. The tumor was also connected closely with the outer aspect of the theca, but had not penetrated to its inner surface, the spinal arachnoid being healthy, and the effect on the cord due, seemingly, to pressure alone. Under the microscope the tumor was found to consist of nucleated cells of irregular shapes, presenting the usual characters of so called malignant growths. It contained no oil-granules or globules. No secondary deposits were detected in any of the neighboring lymphatic glands. Heart—Twelve and a-half ounces; healthy. Pericardium contains half-an ounce of clear fluid. Pleuræ—Left, no adhesions; right, some slight adhesions at apex and posteriorly; no tubercle in either. Spleen—Nine and a-half ounces; soft and pulpy; greatly congested. Liver—Congested, but healthy. Gall bladder con-

tains some yellow bile. Supra-renal capsules seemingly natural. Kidneys—Left, seven ounces; right, six and a-half ounces. Capsules retract slightly when divided; surface smooth, extremely congested, and mottled with numerous irregular, pale, white patches, the largest the size of a split pea. On section extremely congested throughout. The bases of the pyramids slightly frayed out. On the surface of the section white patches similar to those on the exterior, with some of which they are continuous. Under the microscope only extreme congestion, except in the white patches, which appear anæmic, with a slightly granular condition of contents of tubules. Bladder contains a little urine; inner surface congested. Alimentary canal congested throughout, but in other respects normal. The rectum excessively distended with healthy-looking faecal matter.—*London Medical Times and Gazette.*

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#### HYDROPHOBIA.

Cases of hydrophobia still continue to occur in this town. In my last communication I informed you of the man who was bitten in the arm. The same dog bit its mistress still more severely in the cheek and ear. In her case the injured parts were immediately removed; and as yet no bad symptoms have manifested themselves, though seven months have now elapsed since the occurrence. The post-mortem examination of the poor man had not been made at the time I sent up my previous letter. The brain and spinal marrow, with the nerves proceeding from the upper part of the latter, the throat, and all the large viscera were examined; but no decidedly abnormal appearances were found. Since then two boys have died from the same fell disease. One, eleven years of age, was bitten in the lip very severely on the 10th of April. He was taken to the Royal Infirmary, two to three hours at least elapsing before his arrival there. Nitrate of silver was applied to the wound. He remained in the infirmary. On the 8th of May the first symptoms of hydrophobia manifested themselves; and on the 10th he died. In the other and more recent case—a boy of twelve years—the terrible signs of hydrophobia showed themselves on the 1st of June.—It was then recollected that he had been bitten three or four weeks before in the thumb by a strange dog, and for which nothing had been done. He died on the 3rd of June. I do not detail the symptoms in either case, because they closely resembled previous ones. They are all characterized by a peculiar susceptibility about the pharynx and upper part of the windpipe, which, as it increases, gives rise to constant efforts to clear the throat, and, in doing so, to the peculiar noises that are sometimes heard. Neither do I tell of the

treatment. Several medical practitioners saw each of the young patients, and various means were tried. Narcotics seem to be the most often resorted to, of course with the hope of alleviating the great suffering; but the result certainly does not afford any evidence in their favor. The attention of the authorities of the town has been thoroughly roused by the great number of deaths that have now occurred from this cause; and for the last few weeks the crusade against dogs has been terrific. Every day from thirty to forty people attend the Police-court in answer to summonses they have received, and are in most cases fined from 1s. to 5s. and costs for allowing their dogs to be at large. During the month of May alone 700 dogs were destroyed, and 1219 informations laid against owners. Of course these proceedings have given rise to a great deal of dissatisfaction, and numerous letters have appeared in the local journals on the subject. Still to insist on all dogs being muzzled or led by a string when out in the streets seems the only effectual remedy for checking the progress of rabies, which has been now for some years on the increase. In most of the cases of hydrophobia, it has come out in evidence that the dog that had bitten the person did also bite several other dogs; therefore, if it were practicable to confine all dogs till such as had been bitten had manifested the disease and been destroyed, there might be some hope of making hydrophobia of as rare occurrence as formerly.—*Liverpool Correspondent in Lancet.*

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#### CARCINOMA ABOUT THE GALL-DUCTS, CAUSING JAUNDICE.

John G——, a bricklayer, aged fifty-eight, was admitted on the 19th February last, into Guy's Hospital, with extreme jaundice, the skin being of a greenish-yellow color, and he was much wasted. He was of healthy parentage. Twenty-four years ago he had laryngitis, but in all other respects had always been healthy. About ten weeks before admission he had to repair a slate roof, and it was raining hard the whole time; he got very wet, and went home feeling great pain and a sense of weight in his right side. In the night he was in such agony that he rolled on the floor, and thought he should die. A week after this his wife noticed that his skin was of a yellow color all over, and that the "whites of his eyes" were also yellow. From this time he became worse, and sought admission into the hospital. He said that for about four months before his illness he could never drink a glass of ale without nausea or vomiting, and he frequently had diarrhœa. He died on the 25th, six days after admission.

*Autopsy, ten hours after death.*—The under part of the liver was ad-

herent to the stomach and duodenum, and this again to the colon. These adhesions, together with the thickened tissue around and induration of the pancreas, caused a hard mass to be felt in this region. The infiltration was caused by a tough fibrous tissue, which did not present any other appearances than those of inflammation, and might have been so considered had it not been for the cancer of the liver. When the colon was dissected off there was found a hardened mass of material surrounding the portal vessels, &c., and thus the duct was perfectly closed at its termination in the duodenum. This also somewhat constricted the duodenum itself. The pancreas was excessively hard, suggesting at first a scirrhus cancer of the organ; a section, however, showed it to be hardened by inflammatory fibrous tissue around and amongst it. The new material in this neighborhood was hard and fibrous, and gave out no juice on pressure. The gall-ducts throughout the liver were much dilated, and filled with watery mucus; the gall-bladder was contracted, and occupied by white inspissated mucus; the liver was of a deep green color; the pancreatic duct somewhat distended. At the back part of the liver were several deposits, two of them being the size of beans, and hollowed on the surface as in cancer; they were firm and dry. Near these were several smaller ones, but the region where they existed was circumscribed. There were also several very hard deposits of the same kind on the under surface of the diaphragm. No disease was observed in any other part.

The microscope showed the composition of the deposits to be nucleated cells with abundance of oval nuclei.—*Lancet*.

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#### THE LARYNGOSCOPE.

SIR,—In the last number of *THE LANCET*, and in a review of Dr. Gibb's work on Affections of the Throat, special reference is made to the importance of the laryngoscope in assuring accurate diagnosis. For the successful employment of this valuable instrument it is essential that the little mirror introduced at the back of the throat should so accurately reflect the parts beneath that the whole extent of the beautiful laryngeal apparatus may be surveyed as completely as when displayed after death. To effect this it is obviously necessary that the "faucial mirror" be introduced at a temperature sufficiently high to prevent the dimming of its surface by condensation; but it is equally important to guard that the heat be not too great, lest the sensitive membrane resent the introduction of the mirror, and the research have to be begun *de novo*. To overcome the difficulties and obviate the necessity for warming the mirror each time of its use, several ingenious plans have been tried; but nothing

has hitherto been found to succeed, although as your reviewer states, it is the one thing required to make the instrument perfect.

Some while ago I devised a very simple method by which the little reflector might be maintained at any temperature for a considerable time without requiring the attention of the operator. I ask your permission to briefly describe the application.

The faucial mirror is to be constructed with a shallow cell hollowed into the material of which it is made; and the handle, by which the instrument is held and guided, is to be made tubular. These arrangements permit of a small loop of platinum wire, carefully insulated, being placed at the back of the reflector. Each end of this loop communicates with a conducting copper wire. These fine wires run in the hollow of the handle and form flexible threads which connect the instrument with a Smec's battery of two or three cells. Such a battery once set in action continues for many hours without any appreciable variation in force. Immediately on completion of the circle the loop of platinum wire at the back of the mirror becomes heated and elevates the temperature of the reflecting surface. The amount of heat depends mainly on the strength of the battery used. The mirror may be kept gently and uniformly warm, or the wire maintained for hours at a steady white heat. I need scarcely add that this determination of the temperature is a very simple matter of detail in which no scientific laryngoscopist would find any difficulty. The use of the same warming principle for dentists' mirrors is also worthy of note.

The faucial mirror I have myself employed was made and fitted for me by Mr. Ladd of Beak-street, Regent-street, who will afford any information as to the practical application and working of this process.

HENRY G. WRIGHT, M.D., *Lancet*.

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## MEDICAL NEWS.

In London, there is one medical man to every 514 persons. — The number of medical practitioners in England in 1851 over 40 years of age, was 11,105; in 1861 there was only 9910. — The Edinburgh College of Physicians has petitioned Lord Palmerston, with reference to the grievances of the Army Medical Department. — Mr. Paget has resigned his appointment of Examiner on Surgery at the Army Medical Board. Mr. Prescott Hewett succeeds him. — Some amusement was recently caused in the House of Commons, arising out of a question put to Sir George Grey, respecting the power of the Archbishop of Canterbury to confer a degree in medicine upon any one whom he might think



worthy of that honor. The Home Secretary, amid much laughter, stated that the power had been possessed by that Primate, but he could not answer satisfactorily as to whether it could still be exercised. — Sitting rooms are to be organised in some of the Paris hospitals for patients not confined to bed. They will be allowed to engage in recreations compatible with their state of health. — Calcutta has been very unhealthy, and the hospitals have been crowded with cholera patients. — A Miss Garrett recently passed the examination before the Apothecaries' Society, London, being the first lady licensed to practice medicine in Great Britain. She lately applied to the Royal College of Physicians, London, to be allowed to present herself for examination. The question was referred to their legal advisers, who have decided that the charter of the college gave no power to admit females to examination. The application has therefore been courteously declined.—The Council of the University of Laval, Quebec, have conferred the honorary degree of LL.D. on Dr. George D. Gibb, of Portman Street, London, and formerly of Montreal. — Two hundred and seventeen candidates recently underwent their primary examination at the College of Surgeons, London, in a fortnight.

Dr. Parkes, one of the examiners at the Army Medical Board, recently, at a meeting of the Medical Council of Great Britain, delivered a somewhat lengthy address on Medical Education,—a subject which is receiving a good deal of attention at this time in the Mother Country. He stated that it was impossible to do away with the entrance examination, to the Army Medical Department, so long as candidates continued to present themselves who possessed the double qualification of physician and surgeon, and were so sadly deficient in the practical parts of their profession. To prove his assertion, Dr. Parkes read a number of questions and answers given by candidates, who of course were not successful. We copy the following from his address:

“How, sir, can we pass a man into the service who knows so little of anatomy as this—that he does not know the radius from the ulna, the os calcis from the astragalus—that he believes the œsophagus is in front of the arch of the aorta, and that the aorta may rise from the right ventricle? In surgery, sir, I do not think Mr. Syme would allow us to take a man into the army who gave an answer of this kind,—who, when asked what he would do for a partly-divided, or completely-divided, artery, replied, and in writing too, not in the hurry of oral examination, that he would immediately amputate the limb above the injury? I do not think Mr. Syme would approve of a man who, when asked how he would treat an incised wound of the knee-joint, after suggesting various remedies, replied, that if the inflammation still went on he would make

large incisions into the joint. I do not think any one would wish to pass a man who, when he was asked, "what would you do if, after delivery, a woman had her breasts unpleasantly full of milk?" would answer, "I would pass a trocar into the breast." Then, in examination upon medicine, I cannot pass a man who cannot diagnose a single case of phthisis, or who, when he is taken to the bedside, and there is a board at the head of the bed with the name of the disease upon it, "aneurism of the aorta," with bulging pulsation, shrill and loud murmur, who knows it is a case of aneurism of the aorta, who takes twenty minutes to examine the case, and half an hour to write down what he can tell about it, and cannot put down a single symptom or sign of aneurism of the aorta; nor can I pass a man conscientiously, as a man well up in the practice of medicine—a man who has been two years at a London School of medicine and one year at a Scotch School—who tells me that all that time he has never once heard that the term "scabies" is applied to the disease called the itch. Then, sir, to cite some few more instances in what we call natural history: (and here I should have liked to have passed these papers to Dr. Christison. I will not do so; but I know that on these points he will feel particularly interested, for I know that for years Dr. Christison has in his lectures most properly called attention to the subject; and I must say the Edinburgh men have always given correct answers on these points, and in consequence have directed particular attention to the article of diet. And I am sure there can be no more important subject for the study of the medical student than digestion and diet, in these days when every man in the country is talking about diet, and knows a great deal upon the subject:)—here is an answer given by an Englishman, not a Scotchman; a man at a first-rate London school; a man who had passed his examinations as a surgeon and apothecary. The question is this: "Mention the principal heads under which alimentary substances may be arranged, and give one or two instances of each?" Nothing can be more simple: it is a question that is put in class examination. I will read the answer of this gentleman, who, I need not say, did not pass into the army:—"The division is into the nitrogenous and the non-nitrogenous aliments: these may be subdivided into albuminous, fibrous, caseous, and gaseous. An example of the nitrogenous is, all vegetables; of the non-nitrogenous, all meats, including carnivora"—carnivora being wrongly spelt. "Of the subdivision albuminous, perhaps the most common example is the hen's egg; of the fibrous, the meat of the ox or sheep. Veal and pork, I believe, do not contain so much fibrin. Of the caseous, milk and cheese; of the gaseous, soda water."

# Canada Medical Journal.

MONTREAL, AUGUST, 1864.

## THE BRITISH PHARMACOPŒIA.

The General Council of Medical Education and Registration of Great Britain is composed of three physicians and three surgeons, appointed by her Majesty, with the advice of her Privy Council, and of one representative from each of the colleges and universities in the United Kingdom. By the Medical Act of 1858, among other powers granted them, they were entitled to issue a book containing a list of medicines and their compounds, to be termed the "British Pharmacopœia," which, when published, "shall for all purposes be deemed to be a substitute, throughout Great Britain and Ireland for the several Pharmacopœias already in use."

The necessity for uniformity in pharmaceutical preparations is unquestionable. It is not to be long tolerated in these days of telegraphs and railroads, when a man can breakfast in London and dine in Edinburgh, that he should be subject to the risk of being hurried from this mortal sphere, simply because he presents a prescription received from some London physician, and which if prepared in that city would be at least harmless, but which, if made up in Edinburgh, might send him, without much warning, to eternity. We are supposing a strong case, but one, nevertheless, which might occur. It is, therefore, in every way desirable that uniformity in the strength of medicinal agents should exist throughout the whole kingdom, and extend to the colonies. The question now becomes, whether the work issued by the Medical Council fulfils the requirement,—is it in itself a complete work, or one which should command the confidence of the medical public.

On all sides it is regarded with disfavor, and has suffered at the hands of the entire medical press very severe criticism,—and very justly so, when we look into the work itself: in fact, the Medical Council allow that it is wanting in many particulars, and have, at a recent meeting, appointed a committee, consisting of one member for Scotland, one member for Ireland, and two for England, with the President, whose duty, in the language of Dr. Quain, was "to consist in drawing up a plan as to

the extent to which the present Pharmacopœia should receive modifications. The committee was intended for supervision, not for work. It would be their endeavor to find one or two editors, to whom the task of revising the work would be assigned, under the supervision of the committee." It is much to be regretted that this was not done at first. The British Pharmacopœia as at present issued is a dead letter, and has become a tax on all who have paid out their money for a copy.

It is needless here to add how premature we in Canada should be, were we to adopt this as the national Pharmacopœia, which, in the course of a month or two, must receive such modifications and alterations as to constitute in reality a new work.

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#### RE-VACCINATION.

The question of vaccination is one which the recent prevalence of that very loathsome disease small-pox in our midst has brought home with great force to every one. There can be no doubt now that the discovery which has made the name of Jenner imperishable, has not conferred all those benefits upon the human family, that its sanguine discoverer hoped and wished for. Small-pox has not been blotted out from the category of diseases. On the contrary, it now and then breaks out, carrying dismay into the community where it appears. Why is this? And why is it that we find those who have been vaccinated in youth, and who bear upon their arm good evidence of the fact,—becoming its victims, not alone with the discrete variety, but the malignant confluent? Are all the charms of vaccination,—all the benefits it is said to confer,—a myth? Are the labors of Jenner to be thrown aside, and this disease—the one perhaps most dreaded of all others—be allowed once more to spread itself from city to country, until it is epidemic from one end of Canada to the other? This is no idle dream,—no alarmist's words,—but those, we fear, of sad reality. In February the number of deaths recorded from small-pox in Montreal was 17. In May we find the number has increased to 48; and from what we know of the prevalence of the disease during the month of June, we fear the number will not be behind the last. Is there nothing then which can be done to stay the progress, to arrest the prevalence of this fearful disease? We think there is. And it is for the purpose of drawing the attention of the profession to the matter, that we pen these lines. We think that the object for which vaccination was introduced can be very nearly accomplished by a rigid system of re-vaccination. There can be no denying the fact—for fact it is,—that the protective power which the vaccine lymph gives, is

not continuous; it has an end, when the person vaccinated is almost as liable to the disease as if never the subject of vaccination. Our own experience on this subject during the last two years and a half has been extensive, and our success in re-vaccination most satisfactory. The exact time at which the protective power of the vaccine lymph dies out is not certainly known; nor is there such a uniformity in its disappearance as to warrant an age being positively stated. Very few children, however, over seven years of age, whom we have subjected to re-vaccination, have failed to give us a vaccine scab, which in the great majority of instances, in every feature, bore the sign of a good vaccine pustule.

Some four years ago, Parliament passed an act, authorising the corporations of the chief cities of the Province to appoint public vaccinators, and imposing a penalty of five dollars on every parent or guardian of a child who, within three months after its birth, neglected to have it vaccinated, either by the public vaccinator, or some other legally qualified medical man. We know not what other cities have done; but after the matter had been brought forward by our esteemed friend Dr. Hall in the *British American Journal*, the City Council of Montreal took action in the matter, and put the act in force by appointing three medical men as public vaccinators. During the first two years after their appointment, few, owing to non-acquaintance with the existence of the act, took any notice of it: the result being a comparatively small number of vaccinations; but owing to the distribution by the police authorities last spring of circulars, containing a digest of the act, broadcast through the city, the number of vaccinations this year is very largely in excess of any previous year. From returns handed us on the 15th of July, we find the following have been vaccinated by the gentlemen appointed by the Council, since the 1st of January last. In the East, West, Centre and St. Lawrence Wards, 198. St. Anns and St. Antoine, 415. St. James, St. Louis and St. Marys, 810. Total, 1423.

This is very satisfactory, so far as it goes; and we have no doubt that its influence has and will be felt, in mitigating to a considerable degree, the severity of the disease. But unless re-vaccination, say every seven years, is as compulsory as primary vaccination in young children, and the public as thoroughly imbued with the idea that re-vaccination is as essential to save the youth and adult, as primary vaccination is to the young infant, then is all previous labor lost, and the disease will still continue to have the same full scope to commit its ravages. Perfection, if such a state of things can exist, can only be reached by experience; and the latter assuredly points towards re-vaccination as the only way to

secure as nearly as possible perfect immunity from the disease. We would therefore call the attention of the hon. member who introduced the Vaccination Act, to the absolute necessity which exists for the introduction into it of a clause, rendering it compulsory for vaccination to be repeated every seven years. We have given the matter much thought, and trust that the profession throughout the Province will aid the work by inculcating among their private patients the benefits of re-vaccination.

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THE LATE RAILWAY DISASTER.

The report of this unfortunate affair has been read by all. To attempt a description would be foreign to our purpose and quite unnecessary. It is miraculous that so many escaped with life. We have on several occasions looked from the window of the cars while passing over the bridge at Belœil, and invariably experienced a sense of relief when we found ourselves once more on *terra firma*.

The wounded were brought to this city and distributed between the two hospitals. In the Montreal General Hospital there were admitted 138, all more or less injured. And in the Hotel Dieu 109 were taken into the house, 89 of whom were injured, making a total of 247. All suffered more or less from the jar, some in a very slight degree. At the time we write, about two-thirds have recovered, and have left the city for their destination west.

The Grand Trunk Company are settling the claims of sufferers with promptitude and liberality. Everything that human skill and Christian kindness could suggest, has been done by the authorities of both hospitals, to relieve the sufferers. This large accession to the number of inmates of both hospitals has necessarily entailed extra labor on the physicians in attendance,—a labor which has been one of love.

Admitted into the Montreal General Hospital of men, women and children, 138. Slight contusions, 89; severe contusions, 6; injury of spine with paraplegia, 1; Fracture of skull, 1; of face with paralysis of eye-lid 1; of leg, 3; of thigh, 2; of arm, 4; of clavicle 4; of body of scapula, 1; of neck of scapula, 1; of rib, 1; not injured, 25. One woman brought to Hospital dead, 1; One woman died shortly after admission. Two children included in above have since died.

There were admitted into the Hotel Dieu Hospital, of men, women and children, 109. Of these there were: Slight contusions, 50; severe contusions, 20; fractures of arm, 6; fracture of leg, 1; fractures of arm and leg, 2; fracture of clavicle, 2; fractures of scapula, 1; dislocation of shoulder, 4; amputation of thigh, performed at Belœil, 1; delivery, the

night of admission into hospital, 1; died from concussion of brain, 1; total, 89. The remaining 20 were chiefly children, and relations of parties injured, but who had themselves escaped without a scratch.

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#### THE LA POMMERAIS TRIAL.

In the first number of the "Canada Medical Journal" we announced that a homeopathic physician had been arrested in Paris on a charge of poisoning his mistress with digitaline, he having first effected insurances on her life to a large amount, the policies being transferred to him. Since then the trial has taken place; he has been found guilty, condemned to death, and executed. Its details are so interesting, and the nature of the experiments to further the ends of justice so unusual, that we deem no apology necessary for occupying so much of our space with it. From the evidence, both circumstantial and scientific, no other verdict but the one of guilty could be arrived at; yet not a great while ago in England, evidence derived from experiments made with the vomited matter and extracts made from the viscera, was rejected by a jury as being untrustworthy, though submitted by one of the most eminent toxicologists of the day. The digest of the trial is copied from the "Medical Times and Gazette," of May 28.

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#### DEATH OF PROFESSOR MILLER OF EDINBURGH.

Of late death has been busy with the leading members of our profession, many being cut off in the prime of life, and in the full tide of their prosperity and usefulness. The name which heads this article is one familiar to every Canadian surgeon, many of whom have followed (as it was our pleasure not many winters ago) his thoroughly practical lectures in the University of Edinburgh. Professor Miller received the appointment of Professor of Surgery in the above-named University in 1842, and he ably filled the chair up to the time of his death, which took place on the 18th June, from congestion of the brain, after an illness of three weeks. He was in the prime of life. His chief works were his "Principles of Surgery," and his "Practice of Surgery," two separate volumes, which last spring were both republished in one volume, thoroughly revised, entitled, "A System of Surgery." On the subject of total abstinence, Professor Miller took a great interest, and a work written by him, entitled "Nephalism," and published by the Scottish Temperance League, had a large sale. He was a pupil of Liston—on graduating, became his assistant; and when that famous surgeon re-

moved to London, Professor Miller succeeded to his practice. The death of this distinguished surgeon will leave a blank in the Edinburgh School which will not be easily filled. He was but 52 years of age.

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We learn from the London *Lancet*, that the surgeon of the Confederate steamer Alabama was Dr. David Herbert Llewellyn, son of the Rev. David Llewellyn, curate of Euston Royal, Wilts, England, and that he sank with the ship. The following touching episode is related of him: "When the boats were full, a man who was not wounded endeavored to enter one, but was held back by Dr. Llewellyn. "See," he said, "I want to save my life as much as you do, but let the wounded men be saved first." "Doctor," said the officer in the boat, "we can make room for you." "I will not peril the wounded men," he replied. He remained behind, and sank with the ship. A monument is about to be raised to his memory in Charing Cross Hospital, where he received his professional education.

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#### UNIVERSITY OF M'GILL COLLEGE.

We have received the annual announcement of the Medical Faculty of this University for the coming Winter Session, which commences on Monday, the 7th November. Information may be had by applying to the Dean of the Faculty. See advertisement on cover.

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CANADIANS AT EDINBURGH.—Mr. Montizambert, and Mr. Sewell, (the latter, son of Dr. Sewell) of Quebec, received the degree of M. D. at the last convocation of the Edinburgh University. Dr. Sewell remains in Edinburgh as House Surgeon in the Royal Infirmary under Mr. Syme.

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UNLICENSED PRACTITIONERS.—We notice by the Quebec papers that the College of Physicians and Surgeons has prosecuted an unlicensed practitioner at St. Croix, County of Lotbinière, named Charles Ouellet. He was fined £5 and costs. When will they commence a similar course in our own city?

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In a late discussion at the Parisian Surgical Society, on amputations, M. Broca observed that statistics proved little or nothing in the matter. Amputations made in Paris and in the provinces were followed by very different results. In the provinces, amputation of the thigh generally succeeds; but in Parisian hospitals, it is an operation of extreme danger,



death being the rule, and recovery from it the exception. Statistics, according to M. Broca, show that the mortality in Paris hospitals after amputation of the thigh for injuries is 100 per cent. ! Trélat makes it 83 in 100 cases.

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The new Morgue in Paris is just completed. It has twelve tables of black marble, and the room is lighted from the ceiling. Photographic likenesses of unclaimed bodies are taken and preserved. A place of this kind is sadly needed in Montreal, and indeed in every city of the Province.

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We trust that our subscribers will not fail to send us the notes of interesting cases, which may come under their observation. We wish to make the original department of the *Canada Medical Journal* thoroughly instructive, and ask the profession to second our efforts. For our next number we have the promise of two valuable articles—and under our Hospital Report Department, we trust to be able to give the notes of some very interesting cases of paralysis. We have made arrangements which, we think, will very shortly make this department a feature of our journal.

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#### THE FOLLOWING BOOKS HAVE BEEN RECEIVED :

- On Diseases of the Throat and Windpipe. By George D. Gibb, A.M., M.D., Assistant Physician and Lecturer on Forensic Medicine, Westminster Hospital. London; John Churchill. (From the Author.)
- On Diseases of the Skin. By W. Fraser, M.D., Lecturer on Materia Medica, at the Carmichael School of Medicine. Dublin; Fannin & Co. (From the Author.)
- A System of Obstetrics, illustrated by Hugh L. Hodge, M.D. Philadelphia; Blanchard & Lea. (From the Publishers.)
- A Treatise on Human Physiology. By John C. Dalton, Jun., M.D. Third edition. Blanchard & Lea. (From the Publishers.)
- Medical Diagnosis. By J. M. Da Costa, M.D. Philadelphia; J. B. Lippincott & Co. (From Dawson Brothers.)
- The British Pharmacopœia. London; Spottiswoode & Co.
- The Natural Laws of Husbandry. By Justus von Leibig. Edited by John Blyth. Reprint. New York; D. Appleton & Co.
- Practical Pharmacy. By Edward Parish. Philadelphia; Blanchard & Lea. (From the Publishers.)
- Pathology and Treatment of Venereal Diseases. By Freeman Bumstead, M.D. Philadelphia; Blanchard & Lea. (From the Publishers.)

MORTALITY OF THE CITY OF MONTREAL IN MARCH, 1864.

Compiled from the Cemetery Returns, by G. E. Fenwick, M.D.

MOUNT ROYAL CEMETERY.

Disease.	Male.	Female.	Total.	Still-born.	Under 2 years.	From 2 to 10.	From 10 to 20.	From 20 to 30.	From 30 to 40.	From 40 to 50.	From 50 to 60.	From 60 to 70.	From 70 to 80.	From 80 to 90.	From 90 to 100.	Over 100 years.	Centre Ward.	West Ward.	East Ward.	St. Antoine.	St. Ann.	St. Lawrence.	St. Louis.	St. James.	St. Mary.	Not of Montreal	Native Born.	Foreign.	
	Still-born.....	2	4	6	6																2	2				2	6	2	
Senile Debility.....	2	1	3																	1						1	1	2	
Infantile Debility.....	1	5	6		6																					1	6	2	
Small Pox.....	1	1	2																							1	1	2	
Scarlet Fever.....	8	9	17		3	13	1														7	4			2	14	3		
Fever.....	1	1	2																							1	1	2	
Convulsions.....	1	1	2		2																					2	2	2	
Inflammation of Brain	3	3	6		2																3					3	3	3	
Apoplexy.....	1	1	2																							1	1	2	
Paralysis.....	1	1	2																							1	1	2	
Croup.....	1	1	2		1																					1	1	2	
Hooping Cough.....	2	2	4																							2	2	4	
Inflammation of Lungs	4	4	8		2	2																				2	2	4	
Consumption.....	4	5	9		1	1	4	2														4	2			2	2	6	
Disease of Heart.....	1	2	3		1	1																1	1			2	2	1	
Asthma.....																											1	1	2
Inflam. of Bowels.....	1	1	2																							1	1	2	
Diarrhoea.....	2	2	4		1																					1	1	2	
Puerperal Fever.....	2	2	4																							1	1	2	
Dropsy.....	2	1	3		1																					1	1	2	
Disease of Liver.....																										1	1	2	
Disease of Spine.....		1	1		1																					1	1	2	
Tumour.....	1	1	2																							1	1	2	
Cancer.....	1	1	2																							1	1	2	
Total.....	35	39	74	6	17	24	3	5	5	3	4	3	2	1	1	1	1	3	2	19	12	12	13	1	3	9	49	25	

ROMAN CATHOLIC CEMETERY.

Disease.	Male.	Female.	Total.	Still-born.	Under 2 years.	From 2 to 10 years.	From 10 to 20.	From 20 to 30.	From 30 to 40.	From 40 to 50.	From 50 to 60.	From 60 to 70.	From 70 to 80.	From 80 to 90.	From 90 to 100.	Over 100 years.	Centre Ward.	East Ward.	St. Antoine.	St. Ann.	St. Lawrence.	St. Louis.	St. James.	St. Mary.	Securs Grises.	Not of Montreal	Native Born.	Foreign.	
	Still-born.....	9	2	11	11																						3	11	4
Senile Debility.....	4	3	7																							1	4	3	
Infant Debility.....	48	48	96	96																						89	4	3	
Small Pox.....	8	8	16		4	10	1	1																		14	2	2	
Measles.....	1	1	2																							1	1	2	
Scarlet Fever.....	69	43	112		36	73	2	1																		9	77	35	
Fever.....	1	1	2																							1	1	2	
Inflam. Brain.....	2	1	3		3																					2	3	2	
Paralysis.....	3	3	6																							4	4	2	
Croup.....	1	1	2		1																					1	1	2	
Hoop'g Cough.....	1	1	2		1																					1	1	2	
Inflam. Lungs.....	2	2	4																							2	2	4	
Consumption.....	10	10	20		4	5	6	5																		6	10	10	
Disease Heart.....	1	1	2																							1	1	2	
Asthma.....	1	1	2																							1	1	2	
Dentition.....	9	3	12		12																						10	2	
Worms.....	1	1	2		1																					1	1	2	
Inflam. Bowels.....	1	1	2																								1	1	2
Disease Liver.....	1	1	2																							1	1	2	
Disease Kidney.....	1	1	2																							1	1	2	
Dropsy.....		6	6		1																						5	1	
Childbirth.....		6	6																								5	1	
Rheumatism.....		1	1																								1	1	
Abscess.....	3	2	5		1	2																				1	5	1	
Accidental.....	3		3		1	1	1	1																		1	3	1	
Total.....	180	142	322	11	150	95	6	13	13	11	2	10	7	3	1	1	2			38	55	32	31	39	42	45	37	256	166



ABSTRACT OF METEOROLOGICAL OBSERVATIONS,

Taken at the Montreal Observatory, Latitude 45° 31' N. Longitude, 4h. 54m. 11s. IV. of Greenwich. Height above level of the Sea 182 feet. For the month of March, 1864.

BY CHARLES SMALLWOOD, M. D.; L. L. D.

Day of Month.	Reading of the Barometer, corrected, and reduced to 32° F.		Reading of Thermometer.			Mean Tension of Vapor.	Mean Humidity of the Atmosphere.	General direction of Wind.	Horizontal movement in miles.	Mean extent of Clouds in 10ths.	Depth of Rain in inches.	Depth of Snow in inches.	Ozone in 10ths.	Weather, &c.	Remarks for the Month.
	Highest.	Lowest.	Mean.	Max.	Min.										
1	29.948	29.770	29.868	28.0	16.0	135	.854	W	87.61	8.0	.....	.....	1.6	Snow.	Barometer... { Highest, the 22nd day, 30.265 inches. Lowest, the 12th day, 29.197 " Monthly Mean, 29.824 " Monthly Range, 1.098 " Thermometer { Highest, the 25th day, 54° 7. Lowest, the 21st day, 21. Monthly Mean, 32° 07. Greatest Intensity of the Sun's rays, 74° 7. Mean of Humidity, 880. Mean of Humidity, 880. Rain fell on 8 days, amounting to 1.235 inches. Most prevalent wind, N. E. Least prevalent wind, S. W. Most windy day the 24th day, mean miles per hour, 22.14. Least windy day the 16th day, mean miles per hour, 1.68. Aurora Borealis visible 2 nights. Zodiacal light, bright. Lunar Halo, 17th day.
2	29.900	29.717	29.814	34.1	18.9	131	.887	W by N	115.18	6.3	.....	.....	3.0	Snow.	
3	30.012	29.920	30.001	54.0	8.9	138	.867	W by N	143.88	0.0	.....	.....	1.3	Snow.	
4	29.951	29.883	29.910	55.7	21.1	125	.826	S W	65.63	0.0	.....	.....	1.9	Rain.	
5	29.968	29.841	29.900	49.1	34.6	122	.878	N E	290.23	3.6	Inapp	.....	3.6	Rain.	
6	29.900	29.841	29.870	40.2	31.9	126	.869	S W	103.00	10.0	0.170	.....	8.3	Rain.	
7	29.901	29.841	29.870	32.0	33.0	128	.890	S W	200.82	10.0	.....	.....	5.0	Snow.	
8	29.921	29.841	29.880	37.3	25.1	113	.867	S W	104.59	6.3	.....	.....	4.0	Snow.	
9	29.985	29.723	29.854	37.3	31.3	113	.867	S W	149.61	0.6	.....	.....	1.6	Aurora Bor.	
10	29.882	29.722	29.802	40.0	29.3	155	.819	W	55.56	3.6	.....	.....	1.6	Rain.	
11	29.882	29.722	29.802	42.4	22.4	171	.863	N E	98.64	8.6	Inapp	.....	3.3	Rain.	
12	29.861	29.719	29.790	48.3	31.1	246	.839	N E	162.25	8.6	0.849	.....	3.0	Rain.	
13	29.826	29.719	29.772	42.2	31.4	236	.886	W	124.25	3.3	.....	.....	3.3	Rain.	
14	29.804	29.709	29.756	48.2	31.4	260	.890	W	201.40	3.3	.....	.....	2.0	Snow.	
15	29.874	29.717	29.795	44.2	28.7	160	.829	W	178.00	1.0	.....	.....	1.3	Snow.	
16	29.814	29.717	29.765	37.2	10.2	145	.861	W by N	207.04	8.6	.....	.....	2.0	Rain. L. Halo.	
17	29.878	29.717	29.797	34.9	16.1	146	.872	W	49.49	3.6	.....	.....	2.0	Rain.	
18	29.825	29.717	29.771	35.0	14.1	149	.868	N E	120.34	7.6	Inapp	.....	2.3	Rain.	
19	29.830	29.717	29.773	42.3	27.9	197	.801	S W	77.01	8.6	.....	.....	2.3	Rain.	
20	29.802	29.717	29.759	28.1	11.2	122	.882	N E	379.14	1.3	0.25	.....	2.6	Snow.	
21	29.802	29.717	29.759	28.1	12.4	116	.881	N E	182.00	6.6	.....	.....	2.3	Snow.	
22	29.802	29.717	29.759	30.8	2.1	169	.869	W	89.02	3.3	.....	.....	1.3	Snow.	
23	29.802	29.717	29.759	30.8	5.9	191	.850	N E	163.60	3.3	Inapp	.....	1.3	Snow.	
24	29.802	29.717	29.759	34.4	3.6	127	.840	S W	133.80	4.0	.....	.....	2.3	Snow.	
25	29.802	29.717	29.759	35.3	18.4	222	.865	N E	731.40	0.6	.....	.....	2.6	Snow.	
26	29.802	29.717	29.759	42.9	20.4	212	.890	N E	105.40	0.0	Inapp	.....	2.6	Snow.	
27	29.802	29.717	29.759	42.8	23.4	207	.913	N E	121.00	3.3	.....	.....	3.3	Snow.	
28	29.802	29.717	29.759	47.0	36.4	237	.893	N E	107.41	0.0	.....	.....	2.0	Aurora Bor.	
29	29.802	29.717	29.759	53.1	24.2	378	.893	N E	244.20	6.4	.....	.....	2.6	Rain.	
30	29.802	29.717	29.759	53.1	21.4	385	.896	N E	291.56	10.0	.....	.....	2.6	Rain.	
31	29.802	29.717	29.759	37.4	29.9	198	.869	N E	291.56	8.6	0.191	.....	3.0	Rain.	
32	29.802	29.717	29.759	46.4	31.5	224	.909	N E	235.53	8.6	.....	.....	3.0	Rain.	
33	29.802	29.717	29.759	46.4	31.5	224	.909	N E	235.53	8.6	.....	.....	3.0	Rain.	

# ABSTRACT OF METEOROLOGICAL OBSERVATIONS,

*Taken at the Montreal Observatory, Latitude 45° 31' N. Longitude, 4h. 54m. 11s. W. of Greenwich. Height above the level of the Sea 182 feet. For the month of April, 1864.*

BY CHARLES SMALLWOOD, M. D., LL. D.

Day of Month.	Reading of the Barometer, corrected, and reduced to 32° F.		Reading of Thermometer.			Mean Tension of Vapor.	Mean Humidity of Atmosphere.	General direction of Wind.	Horizontal movement in miles.	Mean extent of Clouds in 10ths.	Depth of Rain in Inches.	Depth of Snow in inches.	Ozone in 10ths.	Weather, &c.	Remarks for the Month.	
	Highest	Lowest.	Inches.	Max.	Min.											Mean.
	Inches.	Inches.	Inches.													
1	29.710	29.650	29.687	56.8	29.9	41.0	.913	N E	265.85	7.6	Inapp	.....	8.0	Rain.	Barometer... { Highest, the 9th day, 30.120 inches. Lowest, the 11th day, 29.421 " " Monthly Mean, 29.705	
2	720	673	708	49.7	31.7	40.5	.915	N E	219.44	8.0	0.114	.....	4.0	Rain.		
3	942	882	908	51.1	34.3	44.0	.884	N E	114.10	3.3	.....	.....	2.6	Aurora Bor.		
4	949	886	941	61.2	27.1	41.0	.862	N E	115.10	1.8	.....	.....	1.8	Aurora Bor.		
5	969	902	940	51.4	25.0	40.4	.884	N E	189.81	0.0	.....	.....	1.6	Aurora Bor.		
6	30.047	908	30.028	51.1	32.0	48.9	.840	W by S	85.19	1.3	.....	.....	2.3	Aurora Bor.		
7	064	021	045	59.6	35.1	48.6	.879	N	68.41	0.0	.....	.....	2.0	.....	Thermometer { Lowest, the 5th day, 75° 0. Monthly Mean, 44° 37'. Monthly Range, 45° 37'.	
8	085	010	019	59.8	34.1	43.6	.881	N	127.39	3.3	.....	.....	1.8	.....		
9	120	000	047	58.3	28.9	43.2	.874	N	266.41	1.3	Inapp	.....	1.0	.....		
10	29.862	29.869	29.899	40.1	37.4	39.6	.912	N E	194.40	10.0	Inapp	.....	3.3	Rain—Snow.	Greatest intensity of the Sun's rays, 79° 0. Lowest point of Terrestrial radiation, -20° 4. Mean Humidity .883. Rain fell on 12 days, amounting to 2.060 inches. Snow fell on 6 days, amounting to 2.10 inches. Most prevalent wind, N. E. Least prevalent wind, S. W. Most windy day the 15th day, mean miles per hour, 13.33. Least windy day the 22nd day, mean miles per hour, 2.14.	
11	899	749	827	40.6	39.9	37.6	.907	N E	297.18	10.0	0.213	.....	4.0	Rain—Snow.		
12	920	825	877	40.1	32.4	36.8	.922	N E	123.73	10.0	0.051	.....	2.6	Rain—Snow.		
13	825	804	816	47.4	34.2	39.4	.922	N E	136.00	10.0	.....	.....	2.6	.....		
14	761	770	767	46.1	31.1	30.2	.888	N E	122.24	10.0	.....	.....	2.3	.....		
15	629	601	628	59.0	34.1	45.3	.915	W	320.04	8.6	.....	.....	1.6	Snow.		
16	474	450	468	50.1	34.4	43.1	.868	W	154.05	6.6	.....	.....	3.0	Snow.		
17	599	421	494	46.8	34.2	40.4	.898	W	110.20	8.0	Inapp	.....	3.0	Snow.		
18	861	635	789	45.7	26.6	37.7	.888	W	133.01	10.0	Inapp	.....	3.0	Rain—Snow.		
19	904	875	896	64.6	29.4	46.2	.905	N E	199.86	4.0	.....	.....	3.0	.....		
20	883	800	861	52.4	29.2	43.4	.867	N E by E	60.95	6.6	.....	.....	3.0	.....		
21	913	820	861	68.2	34.7	51.8	.840	N E	124.07	0.0	.....	.....	3.0	Solar Halo—		
22	30.011	932	975	75.0	32.0	52.0	.869	N E	61.42	0.0	.....	.....	1.2	Lunar Halo		
23	29.861	780	814	44.8	39.6	41.6	.920	W by S	244.84	10.0	0.110	.....	3.0	Rain.		
24	30.041	30.024	30.075	66.0	38.4	51.3	.861	N E	309.72	0.0	.....	.....	1.3	Bril. Au. Bor.		
25	29.900	29.854	29.872	58.8	32.4	49.7	.833	N E	219.22	3.6	0.132	.....	1.3	Rain.		
26	769	580	616	55.0	46.0	50.4	.845	N E	125.14	6.6	0.830	.....	3.0	Rain Thund'r		
27	927	614	645	53.6	46.9	50.1	.869	N E	116.68	10.0	0.462	.....	3.3	Rain.		
28	30.065	769	911	42.2	33.1	38.8	.831	N E	151.54	10.0	0.148	.....	2.6	Rain.		
29	040	992	30.022	60.3	33.4	47.7	.811	W by N	114.24	3.6	Inapp	.....	2.0	Rain.		
30	29.906	800	29.868	63.4	34.4	53.4	.831	N by W	151.92	3.3	.....	.....	2.3	.....		