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CANADA
MEDICAL JOURNAL.

ORIGINAL COMMUNICATIONS.

Case of Accidental Poisoning by some Acro-Narcotic Poison, probably Digitalis. By W. MARSDEN, M.D., President of the College of Physicians and Surgeons of Lower Canada; Hon. Member Berkshire Med. Ins., and Lyceum of Nat. Hist.; Fellow Medico-Bot. Soc., London; Corresponding Fellow London Med. Soc.; Fellow Mont. Path. Soc.; Hon. Fellow Medico-Chirurgical Soc., New York, &c., &c., &c.

In reporting the following case, I cannot, in justice to myself, withhold the expression of my surprise and regret, that a gentleman, so long and intimately connected with medical journalism as Dr. A. Hall, should have committed himself (as he has done in the February number of your journal,) by reviewing and criticising this case, on the garbled and imperfect testimony hastily furnished through the unprofessional channels of the daily papers, instead of waiting patiently to be enlightened by persons as capable as himself to do so, and better informed as to facts.

It is hardly necessary to say that the facts, as well as the conclusions of Dr. Hall are erroneous; as this will be seen by the evidence, which has been taken from the coroner's notes. As the evidence is voluminous, I have only extracted what has reference to the medical issue.

Certain portions of the following are *italicised* for facility of reference.

George Rankin, being sworn, says

A little way up St. John street (Mr. Scott and Mr. Murney being with him,) after turning Palace street, it was suggested by one of us that we should stop in the first drug store to take a tonic. We accordingly stopped at Mr. Sturton's. We went in, and the person here present, and who gives his name as Ainsworth Sturton, was the person I saw in the shop. We asked him, I believe it was Mr. Scott, for a tonic or bitters. He told us he knew what we wanted; I do not know the exact words, but they implied this. Before we got the tonic we continued conversing while he was mixing the tonic or bitters, addressing him frequently, which, I can easily understand, might have confused him. Sturton

asked us if we would like a Seidlitz powder to be mixed up with this mixture; I immediately answered that I did not care for it. Mr. Scott followed my example, but Mr. Murney took his with a Seidlitz powder. I was the first to drink mine, or rather a portion of it, leaving about an inch in depth in the bottom of a large tumbler. Upon being told by one of the two above mentioned gentlemen that it would do me very little good if I did not drink the whole of it, I drank the remainder. Mr. Scott then drank off his, and Mr. Murney followed, and did the same. We then left the shop and proceeded towards Ursule street. We went to Mr. Stephen's shop. We remained there from five to ten minutes. We then left there and went to Mr. Breakey's, in Ursule street. After going into the house, and remaining there for about half an hour, I began to feel extraordinary sensations at the ends of my fingers and at the extremities. I mentioned the fact to the gentlemen present, when Mr. Scott said that *he felt the same sensations*, and I think Mr. Murney said the same. Feeling very unwell, I left the house with Mr. Scott, to whom I remarked, on going out of the door, that I was afraid that I was going to be attacked by one of my periodical illnesses; that I thought the sooner I got to the hotel the better. Mr. Murney, the deceased, had, in the meantime, gone to the Bureau of the Board of Works. After arriving at Russell's Hotel, I went to my room immediately; it must have been then a quarter past three. I was there very ill, feeling a numbness at the end of my fingers, a numbness in the scalp of my head, the same in my feet. I felt very sick in my stomach, and vomited the potion which Mr. Sturton had given me, as I think it tasted and looked like it. I then rang the bell for one of the servants of the hotel, requesting him to go down and see whether any of my friends were in the lower part of the hotel. While he was gone I felt much worse, without any acute pain with the same death-like feeling that I felt before. The waiter shortly returned, saying that none of the gentlemen I mentioned were below. About ten minutes after the waiter returned, Mr. Murney came up and found me walking up and down the hall; he then told me that he had gone to the Bureau of the Board of Works, and that *he had fallen down while in the office*, and that some gentleman in the office assisted him up. The reason he assigned for his falling was that *he felt unable to stand up, and that he was afraid we had been poisoned*. I then remarked that something very extraordinary was the matter with me, mentioning, at the same time, that *I could barely walk*. I must have become much worse after this, for they tell me *I fell upon a table*. I became stupid and insensible. I believe that this was owing to my being sick in my stomach; I rather fainted than otherwise. Previous to my falling upon a table Mr. Murney gave instructions to send immediately for a doctor—Dr. Marsden I think. I was then taken to my bed and remained there in a half stupid condition until about six o'clock when I got up, took Mr. Scott's arm and walked up and down the hall, feeling that all that was necessary was a little resolution to get over the effects of what we had taken. Impressed with the importance of this, I went into the room where Mr. Murney, the deceased, was lying, got into the bed alongside of him, and attempted to rouse him by tickling him and talking in such a strain as I thought would encourage him, but he begged for God's sake to have me taken away. I got into my own room. I there had an inclination to sleep, and begged of the gentlemen attending me to allow me to sleep. I described my sensations to Mr. Murney, and he remarked that *they were the same as he had felt since I had left*

him, and was feeling then, namely, numbness in the fingers, in the feet, and an almost incapacity to walk.

When I went to Mr. Murney's bed he was suffering great pain in his stomach, and complaining of a rising in his stomach.

Upon being shown a bottle containing a dark liquid, full to within an inch of the top, and another full to within a quarter of an inch of the top, I say that I think it was the latter that was used in our tonic. I now see the first bottle is labelled T. R. Digitalis, the second bottle is labelled T. R. Catech.

I do not know whether it was before the contents of the bottle were used in the mixture that my impression of the fulness of its contents was formed, or after, for the colour of the contents of the two bottles now shown to me seem to be the same in the light in which they were shown to me. I did not observe any sediment in the bottom of the bottle which was used in the mixture to this moment, for this reason, that I do not think that I saw more than half the length of the bottle, counting from the top, owing to its position.

Each of us had a glass of bitter ale, and that is the only intoxicating drink we took previous to our taking the potion at Mr. Sturton's.

The extraordinary sensations which I felt, and which I have mentioned were the following:—*A numbness, tingling in the ends of my fingers and feet, curves of the legs and sculp of the head.* I had a desire to vomit when I returned to the hotel, which ceased after having vomited the potion. I had two or three passages from the bowels after I had vomited. I did not perceive any extraordinary sensations in the throat.

I had no unusual sensation, no burning sensation about my throat. The taste of this potion remained in my mouth much longer than doses of medicine I have been accustomed to take. I felt giddy, and a contraction of the eyelids and also contraction about the mouth as if it were about to close.

The late Mr. Murney was a gentleman of temperate habits.

Charles Armstrong Scott, being sworn, says * * * * *

Having entered Mr. Sturton's shop, the first person whom we saw was the person here present, stating his name to be Ainsworth Sturton. I asked him to give us a tonic or something to settle our stomachs. He answered that he would do so. During the preparation of the draught we kept talking to young Sturton. The conversation ran on various topics. We addressed Mr. Sturton at times during his preparation of the tonic; we were speaking in a jocular way, but no chaffing. Mr. Sturton asked us if we would take a Scidlitz powder in our tonic. I declined taking any, but Mr. Murney took one. While in Mr. Stephen's store Mr. Rankin complained of a dizziness in the head. Mr. Murney complained also. This was about a quarter of an hour after the draught had been taken at Mr. Sturton's. At the same time I felt an unpleasant sensation about the head, but I did not pay any attention to it. We three then went to Mr. Breakie's place, where we remained about a quarter of an hour. Mr. Murney then left us to go to the Board of Works; we remained about five minutes after him. Going up Ursule street, deceased, Mr. Murney, felt unwell and said that he was afraid that the Scidlitz powder was going to take effect; he took hold of my arm. Mr. Murney made the same complaint in Mr. Breakie's house. Mr. Rankin, while at Mr. Breakie's, complained also, and held his hand to his forehead as though he were in a stupour. He complained of sickness in the stomach,

complained also of *numbness of the limbs and extremities*. On arriving at Russell's Hotel I felt *peculiarly stupid and prostrated, wishing to lie down*. I went to the billiard room opposite to the hotel where I remained for some time, and felt *prostrated*, and slight *spasms coming on*. I felt a *strong inclination to sleep*. I had some brandy, about a quarter to one half a tumbler. I felt at times a *ringing in the ears, numbness in the extremities*; at times I felt *rather frequent palpitations of the heart*. After taking the brandy I felt relieved, and remained in the billiard room about quarter or half an hour, and *still felt the sensations above described* to a certain extent. I then went over to Russell's Hotel and sat for some time in the office. *I do not think that I was in a fit state to remember all that occurred after taking the draught at Mr. Sturton's*. On leaving the office I went to Mr. Rankin's room; I think he was sitting on a chair. At times he would *fall in a stupor*. Mr. Murney was present at that time, and *in rather lively spirits*, he had just had *one stool*. Shortly after this, Mr. Murney complained of *spasms in the stomach, and he appeared to be suffering, and told me that he thought that he was going to die*. He continued complaining of *spasms* sometimes *in the region of the heart, and stomach, and of swelling in the eyes and mouth*. Dr. Marsden felt my pulse and said *it was very low*; he ordered me to take brandy and coffee.

I do not remember paying any attention to any bottles but one in Mr. Sturton's hands. The bottle in question contained *a dark liquid*. The only thing I remember is that the letters T. R. were marked on it. The bottle was *full with the exception of about an inch and a half*. The bottle in question was of about the size of one of the five bottles now shown to me. The potion administered to me and Mr. Rankin contained about two ounces. Mr. Rankin's potion was a little lighter than mine. I did not see Mr. Sturton pouring any thing out of any bottle. The bottle containing *a black liquid*, as I have mentioned, was placed on a shelf opposite the door. * * * * *

I took nothing but a glass of nectar half an hour previous to my entering Mr. Sturton's; I, therefore, can only attribute my *stupor* and indisposition to the tonic administered to me by Mr. Sturton. I took this nectar alone, that is, not with Mr. Rankin or Mr. Murney.

Robert M. Russell, of the City of New York, being sworn, says: * * *

I was at Russell's Hotel, in the office, when the hall-boy stated that Mr. Rankin and Mr. Murney were very ill. I went up and found Mr. Murney in his room *holding on by the bed-post*. He immediately exclaimed. "*I am a dead man.*" "*George,*" meaning Mr. Rankin, "*Scott and myself are all poisoned.*" He complained of being *unable to walk*, and put his arm on my shoulder, and I helped him into Mr. Rankin's room, where I found Mr. Rankin *in a state of insensibility*, fallen across the table, his head close to the window as if he had fallen in the act of trying to get at the window for the purpose of having fresh air. Mr. Murney complained of *numbness* in his limbs, difficulty of respiration, and of not being able to lay down; that he could not breathe when he laid down, and of *pricking sensation* in his fingers and in his face as if pins were sticking in them. * * * He could barely stand, sometimes he could straighten himself, and sometimes let himself go as if he had been exhausted; it came on spasmodically.

James S. Thompson, being sworn, says, * * * I found Mr. Murney in a state of great excitement with *his hands on his stomach*; he complained of *numb-*

ness in the limbs; he also complained of his head and limbs, but he seemed to feel the above mentioned sensations *more in his stomach than anywhere else*. I went into Mr. Rankin's room, and found him lying on a table with his head towards the window, *apparently insensible*.

Samuel Sturton, of Quebec, chemist, being sworn, says, * * * I am the father of Mr. Ainsworth Sturton, who attends to the business in my shop. He is a student with me. Bottles number 1, 2, 3, and 4 were side by side on the shelves; after number four came a bottle containing tincture of iron, then came number five, the latter separated from number six by the stove-pipe. There were five bottles between six and seven, which five bottles could not be mistaken; then followed number seven; number eight was in a corner in another part of the shop. With respect to bottle number four, tr. digitalis, it is my firm conviction that no portion of it has been used since three months. I made it about six years ago, and that is all that I made; it was the only tr. digitalis that I had in my shop. I made no more than the contents of a bottle. When tincture digitalis has been kept long in a bottle a crust or film will form on the inside of the bottle level with the surface of the liquid. On examining the bottle, when I heard of the accident, I found the liquid stand level with the upper surface of the film; this film would take three months to form, the older the tincture is, the longer it takes to form a film. I now distinctly see the film, but see no film about half an inch lower. The digitalis and hyoscyamus, which are numbers four and six, contain poison; the others do not. Digitalis is often given in doses of half an ounce and one ounce to remove the effects of continual intoxication and other diseases.

Robert Henry Russell, of Quebec, Esq., Physician and Surgeon, being sworn, says: * * * It was a narcotico-acrid poison that must have caused the symptoms complained of. Digitalis is one of that class of poisons. Peculiarity of constitution, habit or use, age and the particular state of health at the time, very much modify the action of drugs upon the human body. Taking these into account, and from the history and symptoms of the case as related to me by Mr. Scott, and afterwards by Mr. Rankin, I think that such symptoms might be produced by an over dose of tincture of digitalis, and I believe that Mr. Rankin and Mr. Scott owe their relief to the fact of their having *vomited the contents of their stomachs*. If I were called to a case similar to this one, my first object would be to empty the stomach; and I believe that mustard, which is in every house, should be immediately used for that purpose if the medical man has not any of the ordinary emetics with him. If I was certain that digitalis was the substance producing the symptoms, and that they did not subside after the stomach had been emptied, I would use brandy and opium according to the urgency of the case. Brandy very often produces the desired effect in consequence of digitalis having a tendency to produce both purging and vomiting of its own accord. The narcotico-acrid poisons often produce, under modifying circumstances, *symptoms at first sight very much alike*.

Question by Mr. A. Sturton. Will you specify any other acro-narcotic poisons which could produce symptoms similar to those described by Messrs. Rankin and Scott?

Answer. NOT ANY EXACTLY SIMILAR.

Question. Is not strychnine a narcotico-acrid poison.

Answer. It is, but not in so common use as others, digitalis, aconite, and hyoscyamus.

Question. Could the poison have been absorbed in an hour and a half, so as to render emetics useless?

Answer. Emetics are useful and ought to be used *so long as any portion of the poison is contained in the stomach* to prevent its further accumulation in the system. Digitalis and aconite, particularly when digitalis is administered in large doses, produce tingling and pricking sensations at first, but are easily distinguished afterwards by the *absence of heat and irritation in the mouth and throat when digitalis has been taken, which is always present when aconite has been taken.* In the case of digitalis the feeling experienced in the mouth is that of an *intensely disagreeable bitter taste.* The feeling in the extremities after administration of aconite is described by patients *as a loss of power.* One of the effects of digitalis taken internally is to produce *purging and vomiting.* I have no knowledge that it would produce any other post-mortem appearances that might be expected from the irritation of purging and vomiting. *I do not think that my hearing the evidence of Drs. Moffatt and Marsden would alter the opinions I have expressed. Aconite leaves morbid appearances in the gullet.*

George Stephens, of Quebec, being sworn, says: * * * I keep a store. The deceased, with Mr. Scott and Mr. Rankin, came into my shop shortly after taking the tonic. Mr. Rankin first complained of being unwell. He said he was *uneasy in his stomach.* Mr. Murney said he *was dizzy in the head.*

William Marsden, of Quebec, Esq., Physician and Surgeon, being sworn, says: * * * On arriving at the hotel at *about five o'clock,* I found the deceased, Mr. Murney, lying upon a bed, with Dr. Moffatt and Mr. Ainsworth Sturton in attendance upon him. Mr. Murney being the worst of the three, I examined him first, and then Mr. Rankin and Mr. Scott, and, from the extraordinary *depression and fearful cold sweats, small, frequent, and irregular pulse in Mr. Murney and Mr. Rankin, especially the sensation in the eyeballs described by Mr. Rankin as a feeling as if the eyes were pushing out, or too large, and the lids would not close over them, Mr. Rankin having vomited and purged, and Mr. Scott having vomited, but Mr. Murney having only purged,* I directed my attention immediately and particularly to him. I at once said, "I have not a doubt that they have taken digitalis. The symptoms all indicate that most decidedly; under any circumstances they have taken something that is *fearfully sedative, awfully depressing;* there is no time to be lost and we must at once stimulate them all." I ordered brandy to be given to all without delay. I took a tumbler and poured out from a third to half a tumbler, which I gave to the deceased. I also ordered strong coffee, and asked Mr. Ainsworth Sturton for ammonia. Mr. Murney drank the brandy, *which had the effect of producing immediate vomiting, and thoroughly emptied the stomach.* A quantity of coloured fluid in addition to the brandy, of probably two pints, was thrown up. Young Sturton did not think at that time that digitalis was the cause of his error; he stated that he thought it was aconite. I said, "No, no; it is digitalis." I asked Ainsworth Sturton of what he had composed the draught. He said it contained tincture of gentian, tincture of cardamons, tincture of cinchona, and tincture of ginger and a little ammonia; about half an ounce of each of the four tinctures named, and from twenty to thirty drops of the ammonia. I asked Ainsworth Sturton

to step over with me to his shop, and show me the bottles out of which he had taken the mixture given to those parties. On entering the shop Mr. Ainsworth Sturton went round the counter. He then laid before me on the counter, bottles labelled with the four tinctures that I have already described. The tincture of cardamoms, marked No. 1; the tincture of cinchona, marked No. 3; the tincture of gentian, marked No. 5; and the tincture of ginger, marked No. 7, were the four bottles shewn; and I did not ask for the ammonia nor did Mr. Sturton show it to me. I then said, "Show me where these bottles stand, and show me their places," and he showed me a vacant spot on the shelf, *immediately facing the door*. The shelves are divided by a little pillar or support at certain distances; and, in addition to the bottle marked tr. digitalis, No. 4, there was another bottle labelled tincture of muriate of iron, and nearly half full. There was a vacant space, sufficient for two bottles, to the left of the pillar facing it, and another vacant space sufficient for two other bottles to the right of those just mentioned, and to the left of the next pillar. On the right of the vacant space, and of the pillar, stood a bottle of tincture of hyoscyamus, which I believe to be the one produced. On seeing this I felt my suspicions as to the poison or wrong drug administered, entirely confirmed, and I said to Mr. Sturton, pointing to the bottle containing digitalis, "there it is." I took up the bottle and examined it, looked through it, and remarked that the shoulder and neck were very dusty, more so than any of the bottles on the counter. I took out the stopper, but could not see by that examination of the neck, that any thing had been taken out of the bottle; but I observed three dots where the dust had been displaced, in a direct line from the outer edge of the shoulder to the neck of the bottle, and I was impressed with the conviction that it had been used, and that the three spots had been produced by the liquid having been recently used, and dropped upon them. I held the bottle up between the light, and distinctly saw, as I do now, a couple of lines, the *lowest one nearly half an inch above the fluid*. I then carefully turned the bottle on one side and I saw a line or encrustation on a level, as near as possible with the fluid, and another one nearly half an inch below that, much thicker and stronger in its character, and showing that the fluid had rested there, at some period, for a long time. Immediately after this, whether Ainsworth Sturton had still doubts or not, as to aconite or digitalis, he went round the counter, and, getting a small memorandum book, about a small quarto size, he opened it, and, running down one side with his finger, he said, "I see I had used the aconite, as I had got only two drachms for a prescription." The next day, in order to satisfy myself, I took down some dusty bottles in my own surgery, about in the same state as was the digitalis I have spoken of, and pouring out some of the contents, found no more mark left on the neck than there was on the digitalis bottle which I had examined at Mr. Sturton's the day before.* I also dropped a few drops of tincture of digitalis from my bottle, which was bright and clean, on to the shoulder of one of the dusty bottles, and found that it left a mark similar to those I have alluded to above, the dust and drop seeming to roll off together. We then returned to the hotel; Mr. Murney seemed to have rallied a little. The stomach rejected the coffee and everything else given to him afterwards. I administered about a teaspoonful of sulphuric ether in water to Mr. Murney. His stomach immediately rejected it. I then hurried home leaving instructions to give coffee and brandy, freely, and returned

immediately with a case of instruments, and found that the deceased had had a convulsion in my absence. Repeatedly deceased declared that he was dying, that he never felt so prostrate before. I next applied mustard poultices to his stomach, bowels, and feet. About this time a second convulsion came on, when we applied bottles of hot water, and deceased then, among other symptoms, suffered from one that frequently occurs in poisoning from digitalis, viz., enormous secretion of saliva. This second convulsion convinced me that another such would carry him off. I at this time stated my intention of trying to rouse him by a copious injection of brandy and warm water into the rectum. The third convulsion then came on, and, leaving Dr. Moffat and young Sturton to attend to him, I prepared the injection, but just as I was ready to use it they said he was dead. In the case of Mr. Rankin, there was *frequent fainting*. So marked was *the intermission and irregularity of the pulse at one time in all the cases* that a friend of Mr. Murney's, Mr. Dawson, an unprofessional man, taking his wrist said, "What a strange pulse, it stops altogether now and then." The general symptoms were *nausea, intermittent, and irregular pulse*, in the case of Mr. Murney very rapid occasionally; in that of Mr. Rankin less so, and in that of Mr. Scott least of all. This state of pulse, and his having suffered less than either of the others, I account for by the fact that he had vomited some time before Mr. Rankin, and Mr. Rankin had both *vomited and purged* a considerable time before Mr. Murney. There were tremors in the case of both Mr. Murney and Mr. Rankin; *in all of them pressure of the eye-balls, and frontal headache or facial pain, or pressure without distortion, but as if the mouth were drawn up to a very small size*, although it was not so. There was *extreme coldness* in the case of Mr. Rankin, (we had to wrap him up in blankets,) and *giddiness*, and in the case of Mr. Murney, *cold sweats, convulsions, and death*. There was no dilatation of the pupils in any of the three cases, but in that of the deceased, Mr. Murney, towards the last. I mention this fact because there was another drug that is classed as one of the narcotic poisons on the same shelf near the bottles that were used in the preparation of tonics, that is tincture of hyoscyamus, and had that drug been used by mistake or otherwise, there would have been great dilatation of the pupils. There was another symptom in Mr. Rankin that exists after poisoning from digitalis which is *violent, or spasmodic jumping, or action of the heart, coming on suddenly*, which, ere yesterday, was so violent at about six o'clock a.m., as to shake the whole of his body and the bed under him. I examined the body of Mr. Murney, *post-mortem*, entirely in the presence of Dr. Moffat, and in part of Drs. Jackson and Goldstone. A remarkable feature was the fluid state of the blood in all the organs and tissues, and its darkish colour when rubbed upon the surface. The heart was somewhat enlarged, the right auricle being full and distended with dark fluid blood. The right ventricle contained a little dark fluid blood also. With the exception of the slight enlargement of the heart there were no other morbid appearances worthy of note. The lungs were in some parts *somewhat engorged*, but otherwise healthy, crepitating freely throughout. *The stomach, which contained but a drachm or two of the fluid, with a small particle of food, about the size of a large pea, was intensely inflamed, especially the mucous surface and the coats throughout were engorged, and exhibited a dark appearance* externally. The small intestines exhibited similar appearances throughout a considerable portion of their length, to those presented in

the stomach; most strongly marked in the duodenum and jejunum, being most intense next to the stomach, and less so further down the intestinal canal. The bladder was empty. *The throat and gullet were healthy, and exhibited no trace whatever of inflammatory or other morbid action, excepting at the junction with the stomach, not even what I have repeatedly seen in the throat and gullet of persons addicted to the use of ardent spirits, or habits of intemperance. There was some injection of the vessels on the surface of the brain and slight effusion under the arachnoid membrane at the summit of the head. There was also a little effusion in the ventricles of the brain, a little more than is usual in health. The brain healthy.* I tied both ends of the stomach, and the phial I now show contains it and all its contents, and several feet of the intestinal canal. There can be no doubt; from the appearance of the stomach and intestines and the symptoms, that death was occasioned by a vegetable poison of the narcotico-acrid class, and that no analysis, by the most expert chemist, could reveal anything that could enlighten the jury. From all the circumstances connected with this case, both during life and since the death of the deceased, together with the results of the post-mortem examination, which latter could not definitely, alone, but in conjunction with other symptoms, guide me in the opinion at which I have arrived, I have not the shade of a shadow of a doubt that the deceased came to his death by poisoning from an over-dose of tincture digitalis given by mistake. I am not aware of any certain tests for digitalis, and if all the digitalis supposed to have been given to the deceased could, by chemical analysis, be reduced to the extract which it contains, digitaline, it would yield no perceptible quantity, and when yielded could not, by any test that I know, be proved to be that substance, excepting by experiment on the body.

Question. How long does it take to absorb brandy from the stomach into the system?

Answer. At times as quick as thought.

Question. Is brandy an emetic?

Answer. Brandy is a stimulant.

Question. Was the brandy given as a stimulant to Mr. Murney?

Answer. *Decidedly, and with the view of keeping him alive till something else was done; but in his case it had the effect of producing vomiting, doubtless owing to the highly inflamed condition of the stomach.*

Question. How long after you had taken out the stomach from the deceased did you examine the throat?

Answer. About nineteen hours, because I saw there was a desire by the counsel for Mr. Sturton to make it appear that the late Mr. Murney had died from the effects of aconite, and, as I felt convinced that the poison used was digitalis and not aconite, and, as morbid traces would assuredly have been found had it been aconite, I determined to leave no doubt that such was not the case. It is possible but not probable that angina pectoris caused the violent pulsations previously alluded to. Mr. Rankin never experienced such sensations before, and I have attended Mr. Rankin before, for disease of the heart.

Peter D. Moffatt, of Quebec, Esq., Physician and Surgeon, being sworn; after describing his being sent for, says: * * * I suspected that they were suffering from the effects of some poison. Mr. Sturton stated that he could not rely upon some of the tinctures, because they had not been prepared by himself. I

met Dr. Marsden at the door. I had been *three or four minutes* in the house. Dr. Marsden examined Mr. Murney, and said *no time was to be lost, that he was very prostrate*; he ordered a stimulant, and the patient *immediately vomited*. From the symptoms I am of opinion that Mr. Murney *died from the effect of tincture digitalis*. I have heard the evidence of Dr. Marsden, and I *entirely concur in what he stated in relation to the post-mortem examination*.

George Goldstone, of Quebec, Esq., Physician and Surgeon, being sworn, says: * * * I was present at the post-mortem of Mr. Murney. *I concur entirely with Drs. Marsden and Moffatt as to the statement made by them of the highly inflamed state of the stomach*. I have heard the evidence, and I have formed the opinion decidedly that the death of Mr. Murney was caused by having accidentally taken a powerful dose of some acro-narcotic vegetable poison, but what poison I am not prepared to say; but I cannot bring my mind to believe that it was digitalis.

It must be apparent on reading the foregoing depositions, that this case is involved in some obscurity, which I will try to clear up.

The conduct of the attorney for the defendant was throughout most indiscreet and the evidence, as dictated by him, much distorted.

The word *tingling* was never made use of by any of the patients during their sickness, but was introduced for the first time at the inquest (during the cross-examination) by Mr. Campbell, who *put the word into Mr. Rankin's mouth*, and then into Mr. Scott's. "By numbness," said Mr. Campbell, "you mean tingling." Mr. Rankin explained that by "numbness" he meant a feeling of what is understood by a limb "going asleep." Exactly, said the attorney, and ordered "tingling" to be written down, which was accordingly added in the margin, but without Mr. Rankin's explanation; and on every use of the word numbness afterwards, tingling was uttered by the lawyer!

The design was evidently to break down the idea of digitalis having been the poison administered, and raise doubts in favour of aconite; and thus remove the suspicion of error from Ainsworth Sturton, to his unfortunate shop-boy. My only object was, and is, to get at the facts of this sad case, and I am honestly moved, both by humanity and science, to endeavour to add something to our imperfect store of pathological facts, from my own knowledge and experience.

Dr. Hall, in his hasty critique assumes, that aconite was the poison used, concluding his article on the subject in these words: "I think, in conclusion, that it will be conceded that the train of symptoms as revealed in the three cases, point to aconite as the poison really ingested." I think I shall have no difficulty in convincing him, or any unbiased person, that his deductions are erroneous, and this not only by the strongest circumstantial evidence but by the clearest positive testimony of the symptoms, in both the living and dead. That *aconite*

may have been used in a very small quality is *possible*; but that digitalis was used in poisonous quantity is not only possible, but *morally certain*. In support of this proposition I will relate symptoms that existed in two of the cases not mentioned in my testimony because unimportant to them; but not so to the medical inquirer. Mr. Murney complained of a *strange sensation in the penis* at first, which was followed by a feeling "*as if the penis and testicles were all drawn up into the body, and had disappeared.*" Orfila (1) inferred from his experiments that digitalis first quickens the circulation, and then retards it, rendering it at the same time *more or less irregular*, that it excites symptoms of *intoxication or stupefaction*, augments largely the secretion of urine, and *irritates the mucous membrane of the genito-urinary passages*. Mr. Scott also complained of *peculiar sensations in the urinary organs*, and said that he had a *desire to void urine* without the ability to do so. He also complained of *frontal headache and pressure on the eye-balls*, which he did not mention before the jury.

Writers on this subject mention certain effects produced upon the urinary and genital organs, besides these which may be cited as characteristic of digitalis. Jorg (2) says, "It irritates the digestive organs, causing, among other symptoms, *diarrhœa*, that it greatly augments the discharge of urine, that it *excites the genital organs, causing titillation of the glans penis, erections, and seminal emissions,*" &c. Before entering more fully upon the positive pathological signs furnished in these cases, let us consider the circumstantial evidence.

First, there was *no aconite in the shop*. This was proved by Mr. Sturton's admission to Dr. Marsden, on looking over his memorandum book. But, for the sake of argument, suppose that *two drachms* of common tincture of aconite (not Fleming's) which had been "*obtained about six weeks before to fill a prescription,*" had not been so used; and that the "*careless boy*" had put it into the bottle of tincture of gentian as at first supposed by A. Sturton; what then? The tincture of gentian bottle, that had been used for the tonics, contained fully a pint of fluid after the tonics had been taken out, and must therefore have contained *seventeen ounces and a half* before, or, say *thirty-five half ounce doses*. Divide two drachms, or one hundred and twenty minims, by thirty-five, and it gives $3\frac{2}{5}$ ths of a drop in each dose of the tonic. Does any pathologist believe that *three drops and three sevenths of the tincture of aconite* could or would occasion death, or any of the more aggravated or intense symptoms of poisoning felt and described in these cases? The case related by Dr. Easton, (3) in which twenty-five minims of tincture of aconite were given, shows probably the smallest dose which has proved fatal.

So much then for the *probability*, not to say *possibility* of aconite being "the poison really ingested." Dr. Hall says, "I do not think it necessary to multiply authorities to demonstrate that the symptoms of poisoning by digitalis and aconite are quite specific in each case, and so characteristic as to render it a matter of surprise that the two drugs should be confounded." Here we are decidedly at issue, and I can furnish numerous authorities to support my opinion. Orfila (4), speaking of the acro-narcotic poisons, says, "Il nous semble utile d'établir plusieurs groupes, dans chacun desquels nous rangerons les poisons qui se rapprochent les plus par leur mode d'action." Further, under the head of (5) "Symptomes déterminés par ces poisons," and "Lésions de tissu produites par ces poisons," he furnishes a train of symptoms and effects common to aconite, digitalis, tobacco, &c. Among the recorded symptoms of poisoning by aconite, digitalis, &c., it must be conceded that there are some that are equivocal and varying, depending probably partly on the healthy constitution or idiosyncrasy of the victim, and partly on the dose or circumstances connected with its administration, as the state of the pulse, the stomach and bowels; but, on the other hand, there are some symptoms that may be considered as distinctive or characteristic. Among the latter I would class *burning sensation in the mouth, throat, and stomach* (6), *constriction of the throat, loss of voice*, and laborious breathing, or *burning and numbness in the lips, mouth, and throat, extending to the stomach*; and among the organic or *post mortem* effects are *redness or inflammatory traces in the gullet, &c.*, (8) all distinctive of aconite, and not common to aconite and digitalis. Dr. Fleming (9), who may certainly be cited as authority, says, that in *medicinal doses* it occasions *warmth in the stomach*, nausea, numbness and tingling in the lips and cheeks, extending more or less over the rest of the body, *diminution* in the force and frequency of the pulse, which sometimes sinks to forty in the minute, &c., and when administered in doses adequate to occasion death, the least variable symptoms are, first *numbness, burning and tingling in the mouth, throat and stomach*, then sickness, vomiting, and pain in the epigastrium, next general numbness, prickling, and *impaired sensibility of the skin, impaired or annihilated vision, deafness*, and *vertigo*, also *frothing at the mouth, constriction at the throat, false sensations of weight or enlargement of various parts of the body*, great muscular feebleness and tremor, *loss of voice and laborious breathing*, distressing sense of sinking, and impending death, a small, feeble, irregular, gradually vanishing pulse, cold clammy sweat, pale, bloodless features, together with perfect possession of the natural faculties *and no tendency to stupor or drowsiness*; finally, sudden death at last, as from

hemorrhage, and generally in a period varying from one hour and a half to eight hours. He further (10) *denies that purging is ever produced in any genuine case of poisoning by monkshood, or the existence of stupor or insensibility.*

Ballardini of Brescia, who met with twelve cases of poisoning with the juice of the leaves of aconite (11.), says the *head-ache was chiefly occipital.* Another reliable and tolerably recent authority (12) says, the first and most usual symptoms, of poisoning by aconite, are a *burning and numbness of the lips, mouth, throat and stomach,* followed by tingling in various parts of the body. *loss of sensation, vertigo, and dimness of vision, tremors, cramps, great prostration, sense of fulness in the throat, speechlessness, hurried respiration, and death in a state of collapse.* *General convulsions are unusual,* as we find that in fifty-three cases collected by Dr. Tucker of New York, (13) they are mentioned as having occurred only in seven. The mind remains perfectly clear, he says, there being in general *neither stupor nor delirium.* The latter symptoms were seen only in three cases out of fifty-three, collected by Dr. Tucker. The symptoms of poisoning by aconite, he adds, usually arise within a few minutes after it has been taken; and when death takes place it is in the majority of cases, within three hours; and this authority says, (14) the symptoms are very strongly marked; consisting in a *burning heat in the mouth, throat, gullet, and stomach;* a sensation of swelling in the face, and of tingling over the entire body, &c., and after death, he adds, severe traces of *inflammation* have been found in the *gullet stomach, and intestines.* The most complete medico-legal history of poisoning by aconite, has been given by Dr. Geoghegan, of Dublin. In the Dublin Medical Journal, (15), he says, in *two minutes,* he felt a *burning heat in the mouth, throat, gullet and stomach;* then a sensation of swelling in the face, a general feeling of numbness and creeping of the skin. Restlessness, and dimness of sight, and stupor almost amounting to insensibility, followed; and about one hour after the meal he was found speechless, frothing at the nose and mouth, the hands and jaws clenched, appearing occasionally as if dead, and then again reviving. Vomiting, purging, tenderness of the epigastrium, cramps, tingling of the flesh, and a *burning taste in the mouth* followed. Parcira (16) relates the cases of a family of three persons, who were poisoned by aconite. About three quarters of an hour after dinner, Mr. Prescott complained of *burning and numbness of the lips, mouth, and throat* and which soon *extended to the stomach,* and was accompanied with vomiting, &c. Mrs. Prescott was affected in the same way. She had the same *burning and numbness of the lips, mouth throat, and stomach,* and

violent vomiting. Her attempts to speak were unintelligible sounds, having *lost her power of articulating*, but not her consciousness. She had no cramps, spasms or convulsions. The hearing was unaffected: sensibility of the body was greatly impaired, her face and throat were almost insensible to touch. She felt very giddy, but was neither *delirious nor sleepy*. She was frequently *pulling her throat about*, but she knew not why. The child was similarly but more slightly affected, except that she evinced a slight tendency to sleep. Like the others she was constantly *putting her hands to her throat*. The same authority says, (17) when the root or its tincture is swallowed, the most marked symptoms are, numbness and tinglings of the parts *about the mouth and throat, and of the extremities, vomiting, contracted pupil, and failure of the circulation*.

Dr. Fleming's (18) inaugural essay, which obtained a gold medal from the University of Edinburgh at the graduation in 1844, gives *warmth in the stomach* in doses as small as five drops of the tincture of aconite, increasing in intensity with the increased dose; and after describing four degrees of operation under experiments which do not terminate fatally, he says, when the action of the drug is carried to a fatal extent, the individual becomes entirely *blind, deaf and speechless*. He either retains his consciousness to the last, or is affected with slight wandering delirium; the pupils are dilated; *general muscular tremors*, or even slight convulsions supervene; the pulse becomes *imperceptible both at the wrist and heart*, the temperature of the surface sinks still lower than before, and at length after a few hurried gasps, *death by syncope* takes place.

It will be superfluous to cite more symptoms of poisoning by aconite, having already given enough to shew, that *the only symptoms clearly characteristic of poisoning by aconite in this case was numbness*, which the lawyer persisted in calling tingling. I think also, that I have established circumstantially, but clearly, that only *a very small quantity of tincture of aconite*, could have been given, if given at all. I will now by the same sort of evidence, before referring to the symptoms, demonstrate the *probability that a poisonous quantity of digitalis was used*. The tonic was composed of half an ounce each of the tinctures of cardamons, cinchona, gentian and ginger, besides aromatic spirit of ammonia. Mr. Murney, Mr. Rankin and Mr. Scott, declared, that one of the bottles used for the tonic contained a black liquid, and *was nearly full*. That could not by any possibility have been any of the above, because the tincture of cardamons was hardly *one third full*, and evidently *not so dark* as the cinchona, or digitalis. It could not have been the cinchona be-

cause that was *nearly empty*, there being only about an ounce in the bottom. It could not have been the tincture of gentian or ginger, as they are both *pale coloured*, and were about half full. But it might have been the digitalis bottle, and doubtless was, as it was *nearly full*, and stood *next to the cinchona* on the same shelf, for which it was unquestionably mistaken. It also stood upon the shelf *opposite the door*. To recapitulate; the bottles stood in the following order, from left to right Cardamoms (*third full*), Cinchona (*nearly empty*), Digitalis (*nearly full*), Muriate of iron (*half full*), Gentian (*half-full*), &c. It could not have been the tincture or muriate of iron, as independently of the quantity, the decomposition would have at once shown the mistake. Being convinced in my own mind, that the almost full bottle of digitalis had been used for the almost empty one of tincture of cinchona, I proceeded to make a minute examination of the digitalis bottle, and saw *clearly*, that which the jurors also saw, (Mr. Sturton could not see it) that the line or film, on the tincture of digitalis bottle, "which was nearly half an inch above the fluid," had the appearance of age; and the interspace on the bottle, was *clear, and indicated recent use*. Besides this, *the interspace would contain about an ounce and a half*, which was the quantity used in three tonics. Above the line just mentioned, at the distance of about the twentieth part of an inch, was another line or film, like the former, and *perfectly distinct*, shewing that a drachm or two had been taken out at some former indefinite period. The line or film mentioned by Mr. Sturton in his evidence, as being on a level with the fluid, or nearly so; and the one mentioned by Dr. Marsden, half an inch below it, were not like those above the liquid, either in colour or character; but were *incrustation or deposit* of some other fluid, that had stood a long time quiescent, and *not the whitish film*, which is characteristic of tincture of digitalis; as those above the fluid were. It seemed to have been a deposit of some brownish or reddish brown tincture; such as tincture of senna, or rhubarb, or some other dark brown tincture. My impression is, that the bottle had been used at some former period, for some other tincture than digitalis; as the incrustation or deposit was thicker towards the bottom of the bottle; having distinct concentric parallel rings; shewing that the contents had been taken out at different times.

Dr. Hall says, Dr. Marsden "expressed dissent from the opinion given by Mr. Sturton, respecting the properties of digitalis." It was, he said, a most deadly poison." Will Dr. Hall please point out in Dr. Marsden's evidence, where he expressed such dissent?

Although I have repeatedly given half ounce doses of tincture of digitalis of late in delirium tremens, and I use digitalis in all its forms in

my practice, more extensively perhaps than any half dozen of my professional brethren here—I have never had the hardihood to *administer* even half a drachm of *good* tincture of digitalis at a dose, where my paternal was *free from cerebral excitement*. I nevertheless designate digitalis as a deadly poison, and among numberless authorities who do so, Messrs. Tardieu and Roussin, the former professor of Medical Jurisprudence, and Dean of the Faculty of Medicine of Paris, and the latter associate Professor of Chemistry and Toxicology of the Imperial military Medical school,) say: (19.) *La digitaline est en effet, un des poisons les plus violents que l'on connaisse*; and Orfila (20) remarks, *les feuilles, les extraits aqueux et résineux, ainsi que la teinture alcoolique de digitale, pourprée, jouissent de propriétés vénéneuses très énergiques, à une certaine dose*. Professor Burnet, in one of his best works on Botany; his "Outlines of Botany," describes digitalis, "as one of our most beautiful native plants, and one of the most active indigenous medicines and insidious poisons. (21.)

Let us now consider the symptoms of poisoning by digitalis, as presented by some of the most reliable and recent authorities; and see how far they correspond with the symptoms which presented themselves in the present cases.

Among the most prominent symptoms, Galtier says (22) of digitalis:

Elle ne paraît pas influencer le symptôme nerveux d'une manière aussi profonde que les solanées vireuses; ainsi il y a bien *moins souvent trouble, perturbation de l'intelligence et le délire*, les hallucinations sont aussi bien moins fréquentes et même assez rares. Lecoma est bien moins profond et bien moins constant, tandis que *les convulsions s'observent, au contraire, très souvent*. Dans la *plupart des observations* les troubles cérébraux ont consisté en *vertiges, cephalalgie, étourdissement, pesanteur de tête, démarche chancelante*, comme dans l'ébriation, *perte de connaissance, insensibilité, convulsions, coma, faiblesse très grande*; mais presque toujours *l'intelligence s'est conservée, &c.* Les troubles gastro-intestinaux sont constants, et consistent en *chaleur, douleur, sécheresse, constriction au gosier* quelquefois *salivation* plus ou moins abondante, *nausées, vomissement muqueux, coliques épigastriques ou abdominales, diarrhée*, plus rarement constipation. Ces symptômes apparaissent quelquefois avant les troubles cérébraux, mais le plus souvent ils leurs succèdent, *persistent autant qu'eux* et même plus ou moins de temps après leur disparition. Les urines sont quelquefois suspendues ou rendues avec difficulté, *douleur à l'extrémité de la verge et à la région hypogastrique qui est alors tendue*. La digitale a une très grande influence sur les organes de la circulation.

Le pouls est constamment ralenti, et peut tomber à 50. 40. 30. pulsations; il est en outre *intermittant irrégulier* dans ses battements. Les *cardialgies, les syncopes, les hypothermies* sont assez fréquentes. *Le froid à la peau est très intense et s'accompagne quelquefois de sueur visqueuse.* La marche de l'empoisonnement par le digitale est loin d'être constante; ce sont ordinairement d'abord des symptômes *cérébraux légers qui apparaissent les premiers auxquels s'ajoutent bientôt les troubles gastro intestinaux et circulatoires*, et si la terminaison doit être fatale, *les uns les autres deviennent plus intenses* et la malade succombe en douze, vingt-quatre heures.

The italics in the preceding description indicate symptoms that were common to all three of these cases. Christison (23) also describes the symptoms produced by a dose somewhat larger than is usually given with a minuteness that is most applicable to these cases, as follows: "*Great nausea, frontal headache, sense of disagreeable dryness in the gums and pharynx, some salivation, giddiness, weakness of the limbs, feebleness and increased frequency of the pulse, in a few hours an appearance of sparks before the eyes, and subsequently dimness of vision, and a feeling of pressure on the eyeballs.*"

Dr. Sigmond (24) says, when the poisonous effects are produced after the symptoms of disturbance of the alimentary canal (indicated by *vomiting and purging, then vertigo, drowsiness, and frequent faintings*) come on, the skin is bedewed with *a cold sweat*, the tongue and lips swell, *profuse salivation occurs*, sometimes *the action of the kidneys is totally suspended*, at other times it is increased, with *frequent desire to expel the urine*, or at other times inability to retain it is felt; *the pulse intermits, and is slow*, and delirium, *hiccough, cold sweats, confused vision, sometimes convulsions, and frequent faintings follow*, till death closes the scene.

Let us take the symptoms of poisoning by digitalis according to Pereira, when given in fatal doses, as described by Dr. Hall, and add to them numbness, drowsiness and salivation, and they will exactly describe the case of Mr. Murney, and read thus, "*vomiting, purging, and griping pain in the bowels; slow, feeble, and irregular pulse, great faintness, and cold sweats; discolored vision at first, giddiness, extreme debility; drowsiness, salivation, afterwards insensibility and convulsions with dilated insensible pupils,*" and numbness from the beginning. Will Dr. Hall say that these are the symptoms of poisoning by aconite *because there was numbness or a prickling sensation,*" as if the part had fallen asleep?"

Of the toxic effects of digitalis *post mortem* little is known, and it is

therefore deeply to be regretted that the evidence in these cases is not of a more positive kind. In the numerous writers that I have consulted on this part of my subject, it is generally disposed of thus, "injection of the external membranes of the brain, and some redness of the mucous membranes of the stomach." The recent case however of la veuve de Pauw (25) throws some light on this hitherto unknown subject; from which I extract the following:

"Le cerveau est à l'état normal. L'intérieur de la bouche et de l'arrière gorge n'offre rien à noter.

"Les poumons sont parfaitement sains, nous n'y découvrons ni congestions, ni altérations inflammatoires, ou tuberculeuses. Le cœur également intact renferme une assez grande quantité de sang à demi coagulé. Après l'avoir débarrassé de tous les caillots, nous constatons que toutes les parties de cette organe, et notamment les valvules et orifices, sont tout à fait à l'état normal.

"A l'ouverture de l'abdomen, on ne trouve aucun épanchement de sang de sérosité, ni d'aucun autre liquide dans cette cavité, les viscères abdominaux, la foie, la rate et les reins sont sains. Quant au tube digestif, estomac et intestins ils présentent seulement par places quelques suffusions sanguines, quelques points congestionnés répandus dans toute la longueur de l'intestin; *mais nulle part la membrane muqueuse n'est le siège d'une inflammation soit aiguë soit chronique*, nulle part il n'y a ni ulcérations, ni amollissement, ni perforation."

In my evidence before the coroner I said "the stomach was intensely inflamed, especially the mucous surface; and *the coats throughout were engorged, and exhibited dark appearances externally*. But I must admit that the foregoing description of Tardieu and Roussin is far more accurate than mine. I ought to have said that the stomach was intensely congested or engorged, but not inflamed. The true appearance was *congestion* and not inflammation, and seemed to extend to the deepest seated tissues, or the subjacent coats; and is more accurately described when I say that, "the coats *throughout were engorged, and exhibited dark appearances externally*."

The following symptoms from the same report are analogous to those in my case, and especially those having reference to the heart and circulation: "Les premiers symptômes graves, qu'elle a éprouvés dans la nuit qui a précédé sa mort, ont consisté en vomissements répétés et d'une extrême violence, et en *une affaiblissement rapide*. Le médecin fort distingué qui l'a vue à ses derniers moments, M. le docteur Blachez, chef de chimie, de la faculté, constate, qu'elle est *pâle, fort agitée, baignée d'une sueur froide*, se plaignant d'un mal de tête insupportable; le

pouls est irrégulier, INTERMITTANT, PUIS IMPERCEPTIBLE; les battements du cœur TUMULTUEUX, IRRÉGULIERS, CESSANT PAR INSTANT et BIENTOT PRESQUE SUPPRIMÉS.

M. Blachez compare ces symptômes à ceux que l'on observe chez les gens qui succombent à une hémorrhagie interne brusque et abondante. Il ne faut pas perdre de vue que ce n'est là qu'une comparaison, et l'on reconnaîtra qu'elle est parfaitement juste, et prouve bien le fait dominant, celui d'une affaiblissement de l'organe centrale de la circulation. M. Blachez dans les moyens qu'il prescrit ne se pré-occupe que d'une chose, c'est de ranimer l'action du cœur (27.)

M. Blachez having no suspicion of poisoning, did not, like Dr. Marsden, suspect digitalis to be the cause of the remarkable symptoms that he witnessed; which indicated "something fearfully sedative, awfully depressing," and resembled "une hémorrhagie interne, brusque et adouante;" but, like Dr. Marsden, he first directed all his efforts to one solitary indication, viz., "to restore the action of the heart."

Space will not allow me to multiply extracts to establish the symptoms of poisoning by digitalis, numerous and strikingly characteristic as they are to be found. The little that is known of the *post obit* appearances of the toxical effects of digitalis, generally corresponds with the appearances in this case, and rather favours the idea of digitalis being the poison than aconite, of which latter, the *post obit* symptoms are better known.

Much has been said about huge doses of digitalis, which my own extensive experience from a very free use of the drug, induces me to condemn, as being as dangerous as reprehensible; and Christison says, (28) "the preparations of foxglove are very uncertain in strength. From what I have observed in the course of their medicinal employment, I consider few powders retain the active properties of the leaves, and even not many tinctures. Two ounces of the tincture of the London College, have been taken in two doses, with a short interval between them, yet without causing any inconvenience. This assuredly could not happen with a sound preparation."

The variable strength of the different preparations is also a cause of danger. Dr. Sigmond (29) mentions a case related by Mr. Brande, in which a person who had been in the habit of taking forty drops of the tincture of digitalis nightly, went into the country to visit a friend, and forgot to take the accustomed dose with him. He sent to a neighbouring apothecary for it, took it, and before morning died, actually exhausted by one of the marked effects on the nerves, where it produces its deleterious influence,—repeated faintings.

I will briefly sum up with a detail of the various symptoms which presented themselves in these cases, of which Dr. Moffat was a witness, as well as myself; leaving it to the enlightened and unprejudiced reader to draw his own conclusions.

1. Numbness in the hands and feet, legs and scalp.
2. Nausea, vomiting and purging.
3. Frontal headache, and a feeling of pressure on the eyeballs.
4. Great prostration and exhaustion, with weakness in the limbs.
5. Drowsiness, sleepiness, insensibility and stupor.
6. Syncope, and frequent faintings.
7. Irregular, slow, and intermitting pulse, stopping completely for several pulsations.
8. Palpitation, thumping and leaping of the heart.
9. Giddiness and staggering gait.
10. Salivation.
11. Spasms in the heart and stomach.
12. Abdominal pain and rising in the stomach.
13. A sensation of contraction of the mouth, as if drawn up into a very small size.
14. Convulsions and death.

There was no sense of heat or burning in the mouth, throat, gullet, or stomach, nor the characteristic "tingling" of aconite, in any of these cases; nor were there any of the ordinary *post obit* appearances in those parts; but, on the other hand, there was the indicative, irregular, intermitting pulse of digitalis, with palpitations and leaping and thumping, (*les battants du cœur tumultueux* of M. Blachez,) and faintings. Aconite, (30) is a sedative of the cerebro-spinal system, by its direct action upon the nervous matter, and on the heart, and by its indirect action on both, through the congestion to which it gives rise. Digitalis, is a local excitant, and powerful sedative of the muscular and nervous systems: the former acting most powerfully and directly on the brain, and the latter on the heart. Of the toxic effects of aconite it may be said that *it annihilates the brain*; and of the latter, in the expressive language of Sigmond, "*It kills the heart.*"

In conclusion, from all I have read, and seen on this subject, I make the following deductions:

1. With digitalis, vomiting and purging always occur; but with aconite, purging rarely.
2. Digitalis always acts on the genito-urinary organs; aconite very rarely.
3. In digitalis the pupils are most frequently dilated, and in aconite

contracted. But, that is not a reliable symptom, as Fleming makes dilatation rather than contraction a symptom of aconite.

4. Pulse irregular and intermittent and fast or slow, *early* with digitalis, and irregular and reduced in strength *towards the last* with aconite.

5. Never heat or burning in the mouth, throat, gullet or stomach, with digitalis; always with aconite, even in doses as small as five drops.

6. Never redness or inflammatory traces in the mouth, throat or gullet, with digitalis; generally with aconite.

7. Drowsiness and stupor with digitalis generally; and wakefulness and delirium with aconite.

8. Pressure on the eyeballs with digitalis; none with aconite.

9. Pain in the head with digitalis, generally frontal; with aconite occipital.

10. Salivation generally with digitalis; with aconite never.

11. Respiration frequently slower and more laborious with aconite than with digitalis.

12. With aconite there is loss of speech, deafness or blindness sometimes, but not with digitalis, although the vision in both cases is sometimes similarly affected.

13. Giddiness is common to both digitalis and aconite.

14. Cold sweats, the same.

15. Numbness, tingling and prickling is peculiar to aconite.

16. In the majority of fatal cases of poisoning with digitalis, there are convulsions; whereas the reverse is the case with aconite.

It will be observed that Mr. Murney was the first to be affected with purging and pain in the bowels, and the last to vomit, which I am disposed to attribute to the action of the seidlitz powder, that was in his tonic; and this, probably, tended to the fatal issue in his case.

Finally:—Among the numerous recorded cases of poisoning with the acro-narcotic vegetable poisons, and especially aconite, the fact is patent, that in many of them where the symptoms produced by the suspected poison have been described, they do not always correspond with the recognized symptoms of the real poison. Doubts have been repeatedly expressed by toxicologists as expert as Pereira, Fleming, Christison, Galtier, and others, of the authenticity of such cases; where the unusual symptoms may have arisen from “some other root or plant being mistaken by the narrators for the real one, or from irritant substances given along with or after it.

NOTES.

1. Orfila, Toxicologie, ii, page 566.
2. Stillé's Therapeutics, vol. ii, p. 328.
3. Glasgow Medical Journal, July, 1853.
4. Traité de Médecine Légale, vol. iii, p. 399.
5. Idem, pp. 399, 400, art. 157, 158.
6. Christison on Poisons, p. 666. Amer. Ed., Philadelphia, 1845.
7. Pereira, Elements of Materia Medica, vol. ii, p. 1807.
8. Pallas, These Inaugurale, Paris, 1822, from Orfila's Tox. Gen. 1827, vol. ii, p. 221.
9. Christison ut supra, p. 666.
10. Ibidem, p. 667.
11. Ib., p. 669.
12. Wharton & Stillé, Med. Jurisprudence, Philadel. 1855, p. 519.
13. New York Journal of Medicine for March, 1854.
14. Guy's Medical Jurisprudence, p. 697. Lee, New York, 1845.
15. Taylor's Medical Jurisprudence under Aconitum Napellus.
16. Pereira's Materia Medica and Therapeutics, vol. ii, p. 1087.
17. Ibidem, p. 1089.
18. Stillé's Therapeutics and Materia Medica, vol. ii, p. 355.
19. Annales d'Hygiène publique et de Médecine Légale, deuxième série, Juillet, 1864, 43^e numero, p. 97.
20. Traité de Médecine Légale, vol. iii, p. 422.
21. London Lancet, Dr. Sigmond's Lectures, vol. xxxii, for 1836-37, fol. 534.
22. Traité de Toxicologie, tome ii, p. 233. Galtier.
23. Christison on Poisons, p. 679.
24. London Lancet, vol. xxxii, p. 532.
25. Annales d'Hygiène ut supra, p. 82.
26. Galtier, Traité de Toxicologie, tome ii, p. 286.
27. Annales d'Hygiène, ut sup., p. 121.
28. Christison on Poisons, p. 680.
29. London Lancet, vol. xxxii, p. 460.
30. Stillé's Therapeutics and Materia Medica, ut supra.

Notes on "Remarks on the late case of Accidental Poisoning, by A. Hall, M.D.," Professor of Midwifery, McGill University, &c., &c. By R. H. RUSSELL, M.D.Edin., M.R.C.S.Lond.

The unfortunate case of accidental poisoning that occurred at Quebec about the end of December last, has called forth some remarks from Dr. A. Hall, of Montreal, which appeared in the "*Canada Medical Journal*," for the month of February. Dr. Hall, equally with every one else, has an undoubted right to his opinions on these matters, which are of very grave importance to the public. When these opinions are honest deductions, based upon a fair and honest statement of the facts and principles

advanced, and not from a garbled statement of the evidence, they are entitled to some notice, but this, I regret to say, has not been adhered to by Dr. Hall when criticising my evidence.

I shall only attempt a brief review of the facts as stated in evidence at the inquest, and, in justice, claim from the "Canada Medical Journal" the privilege of laying these statements before the profession and the public.

From the character of the symptoms observed by Dr. Marsden in the three cases, he at once concluded that they were caused by digitalis. Mr. Sturton, jun., objected to this, and thought aconite might have been mixed by mistake by a careless boy he had in his shop, with one of the tinctures he had given.

Dr. Marsden, having tasted the contents of the bottle which contained the supposed aconite, pronounced them to be tincture of gentian.

On the other hand, a close examination of the tincture of digitalis bottle, convinced Dr. Marsden that about the quantity stated to have been administered in the three potions, viz., one ounce and a half, had been recently taken from it. This he determined by the space he observed, between the level of the fluid in the bottle and a well-marked circular film above the fluid, distinctly showing where the fluid had stood for some time previously. This kind of evidence will be well understood by practitioners, who are in the habit of preparing their own prescriptions, which is almost the universal practice in Quebec. Of the whole range of vegetable tinctures, I know of none which so readily and distinctly forms this circular line on the bottle, as the tincture of digitalis.

Dr. Marsden states in his evidence:—"Immediately after this, whether Mr. A. Sturton had still doubts or not, as to the aconite or digitalis, he went round the counter, and getting a small memorandum book opened it, and, running down one side with his finger, he said, '*I see I had used the aconite as I got only two drachms for a prescription.*'"

Is this not strong moral proof against the presumption that "aconite was the poison really ingested?" Here we have the statement of Mr. Sturton, jun., the proprietor and manager of this establishment, (who has never obtained a license, or legal qualification of any kind for so responsible a position,) that he had previously used *all* the tincture of aconite (two drachms recently purchased for a prescription) which he had in his store, and of this he satisfied himself by a reference to his prescription book.

When the statement of Dr. Marsden, in regard to the height of the tincture of digitalis in the bottle, the declaration of Mr. Sturton, jun., and Mr. Sturton, sen., to the contrary notwithstanding, is coupled with the fact established by the prescription book of Mr. Sturton, jun.,

that he had no tincture of aconite in his shop at the time, I think it more reasonable, as well as in perfect accordance with the facts and the evidence, to attribute the cause of death to digitalis and not to aconite.

Why did Dr. Hall omit to give the statement of Dr. Marsden in regard to the tincture of digitalis bottle when he quoted the declaration of the Messrs. Sturton on that point? The reason is obvious.

Such then are the proofs against the presumption that aconite was the cause of death.

The defence intended to have been set up was, first, an exposure of the habits and mode of life of the deceased, and by this means to prove that neither the death of Mr. Murney nor the symptoms in the other two gentlemen, his associates, were caused by the potion they had taken in Mr. Sturton's store. It was discovered, however, that the temperate habits, the regular mode of life, and the unblemished character of the deceased could be established by hosts of respectable and trustworthy witnesses, in refutation of so base an attempt to stain the character of the dead.

The other alternative to be pleaded was the act of the careless boy mixing the two drachms of tincture of aconite with the tincture of gentian. Why was not this careless boy examined on this point at the inquest?

It must be admitted, however, that opinions are very discordant respecting the medicinal powers of digitalis. May not these discrepancies arise, in a great measure, from the quality of the plant selected, as well as from the want of uniformity in the preparations employed, besides the well known liability of all the preparations of digitalis to deteriorate. When the large doses of tincture of digitalis employed by Dr. King became known thirty years ago, it was suggested that as Dr. King lived in Suffolk, and as the plant is not found wild in that county, nor in the adjoining counties of Norfolk and Cambridge, he was not acquainted with the true plant, the genuine *purple-stalked* digitalis, and that there must have been either some mistake on his part in the preparation, or that the true plant was not used.

Christison, an eminent authority, says, "there is no advantage in the large doses of a drachm and upwards, of the tincture of digitalis, which have been recommended by some; and such doses must be often dangerous."

I do not think that I am called upon now to demonstrate what are the specific symptoms that characterize any individual poison or class of poisons. Every tyro who reads any one of the "Manuals" on this important branch of medical education, thinks he knows them, and also thinks that

they will apply with mathematical exactness to each individual case that may present itself. In practice, however, both at the bed-side and in the witness box, how great a delusion! At one time convulsions may be present, at another absent, and in both instances the same cause operating. In another case the effect produced is irritant; in the next case, and from the same drug, the effect, narcotic. At one time he will find a few grains of arsenic have produced death, at another time half an ounce, an ounce, and even an ounce and a half of the same poison have produced no deleterious effect.

With a full knowledge of the fact, that, in one case, idiosyncrasy, in another habit, and in a third a particular state of health at the moment will produce an almost incredible tolerance of certain drugs. For example, in delirium tremens the surprising tolerance of opium, and, what will better apply to our present inquiry, the tolerance of tincture of digitalis itself, as first recommended by Dr. Jones, in that disease, and of the latter, as employed, more than thirty years ago, in doses of one ounce, in the treatment of acute inflammations, particularly pneumonia, I hold that, with a knowledge of such facts before our eyes, to give an unqualified answer to a general question, based upon discordant medical opinions and discrepant medical facts, is to forget the high moral responsibility that attaches to the duties of a medical witness and to defeat the ends of justice and the due protection of society. Such would, undoubtedly have been the result in this case, by inducing the jury to believe that one ounce was the regular and established dose of the tincture of digitalis in all cases, and was recognized as such by medical authors. The question put by Mr. Campbell, advocate, on the point was, "Have you read in Pereira, Dunglison, and other medical authors of doses of one ounce of tincture of digitalis being given, and do you believe it?"

I shall now, in conclusion, only briefly notice what my friend, Dr. A. Hall, intended to be the decisive finishing stroke, the *coup de grâce* to the whole affair.

Question by Mr. Campbell, advocate.—"Is not strychnine a narcotico-acrid poison?" Answer. "It is."

Dr. Hall remarks, "I am persuaded that it will be news to all medical writers on the *materia medica in future* to have to class strychnine among the narcotico-acrid poisons."

All the medical writers on the *materia medica*, or on medical jurisprudence, French, British, and American, with whose works I am familiar, class strychnine among the narcotico-acrid poisons. I subjoin a list of some of those authors, and for the convenience of Dr. A. Hall, I note

the volume and page in each. "I am persuaded" that a careful perusal "of them will afford news" to Dr. A. Hall.

Orfila, tom. 2, p. 5. et 246 à 279, also tom. 3, p. 438 et 406; Devergie, tom. 2, p. 835; Briaud, p. 491 et 472; Alibert, tom. 1, p. 429; Galtier, tom. 2, p. 246; Christison, fol. 682; Taylor, fol. 41; Guy, fol. 698; Smith, fol. 90; Beck, 1051 and 1028; Ryan, fol. 425 and 430; Dean, fol. 407; Stillé, fol. 514.

Quebec, 22nd February, 1865.

Resection of the Elbow Joint; successfully performed on account of complete ankylosis after a gunshot wound. By DONALD MACLEAN, M.D., L.R.C.S.E., Prof. of the Institutes of Medicine, and Lecturer on Clinical Surgery, Queen's College, Kingston, C. W.

NOTE. The following case was treated by Dr. Maclean, during his service as Medical officer in charge of the Surgical wards of the Brown (U. S. A.) General Hospital, Louisville, Ky. :

CASE. William Whitten, a private of Company H., 121st Regiment, Ohio Vol. Infantry. Aged 22. Single. Admitted April 13th, 1864.

Previous History. His occupation previous to enlistment was that of a farmer. Of temperate habits. Had always enjoyed good health until he was wounded at the battle of Chickamanga, on the 20th September 1863, by a Springfield rifle ball, which entered the posterior and radial surface of the left fore arm at a point about two inches below the elbow joint; passed upwards and inwards, and lodged on the inner side of the arm about the same distance above the joint. Patient does not think that the ball passed through the joint, but that it only glanced over it. He states that shortly after the wound was received, the arm began to feel hot and painful, and that it became red and swollen to a considerable extent around the joint.

From the field Hospital he was sent to Hospital No. 3, Nashville, Tenn., where water, and afterwards simple cerate dressings were applied.

For three months after his admission to Hospital No. 3, patient was unable to sit up in bed, owing to the tenderness and irritability of the wounded arm.

About six weeks after his admission to the above-named Hospital, he noticed the joint becoming stiff. The attention of the surgeon having been called to this fact, he took the precaution to flex the forearm, placing it at a right angle to the arm. During this time patient says the wounds discharged very copiously, but he is not aware of any pieces of bone having come away.

About the 1st February, 1864, he began to walk about with his arm in a sling; his general health began to improve, the wounds healed up, but the joint was quite immovable.

By the 1st March his health was quite restored, and with his left elbow joint ankylosed, he was performing light duty. On this day, however, he fell, striking his left arm violently against the end of a bench. About twenty-four hours after this accident, the arm commenced to swell and became very painful.

On the third day afterwards the wound of entrance had re-opened, and continued so for three weeks, during which time it discharged a considerable quantity of pus. It then gradually healed up.

From Hospital No. 3, (Nashville,) he was transferred and admitted into this Hospital, under my care, on the 13th April, 1864.

Condition on Admission. General health excellent. There is complete ankylosis of the left elbow-joint, and a considerable excess of bony tissue surrounding the joint. The wound of entrance is still discharging a little, and there is a sinus extending down to the radius in the direction of the joint. The motion of the fingers much impaired, in fact they are almost immovable. Sensibility also much interfered with. I embraced an early opportunity to explain to the patient, that in my opinion there was still a chance of his obtaining a useful arm by means of the operation of resection. At the same time I did not conceal from him the fact that there was a certain amount of risk inseparable from the operation; that in short, while there was a very good chance of his recovering with a new joint and a serviceable arm, there was also, on the other hand, a chance of his ultimately losing the arm or even his life.

After considering the matter for a few days, and consulting many of the other patients who had been operated upon, or treated by me, he declared himself willing and anxious to have the operation performed, and take his chance of obtaining in the end a useful arm. Accordingly, on 21st April, I proceeded to operate, assisted by Assistant Surgeon B. E. Fryer, U. S. A., in charge of the Hospital; Dr. John A. Ochterlony, U. S. A.; Dr. Wm. T. Kirke, Executive officer of the Hospital, and Coleman Rogers, Medical Cadet, U. S. A. Chloroform having been administered by Mr. Rogers, I made an H shaped incision over the posterior aspect of the joint, reflected the flaps thus formed, upwards and downwards, turned back the skin as far as possible on each side, dissected the ulnar nerve with some difficulty, out of a thick case of soft bony matter, and employed an assistant to hold it out of the way with a blunt hook. I then sawed through the centre of the exposed bone, found no trace of a joint, but the osseous tissue was considerably softer than it

should have been; the protruding ends of bone were now sawed off to the extent of two inches (from each), so that altogether at least four inches (in length) of the bone in the neighbourhood of the original joint had been removed. There was a good deal of oozing, but no vessel worthy of a ligature presented itself. The flaps were replaced and drawn together by metallic sutures, the forearm was placed at a right-angle, the joint enveloped in dry lint, and the patient returned to his bed.

Shortly afterwards arterial blood was observed oozing rapidly from the whole of the inner surface of the wound; cold water was found insufficient to arrest it, and recourse was had to the persulphate of iron with a satisfactory result.

In the evening a grain of morphia in solution was administered, and shortly thereafter the patient fell asleep, and slept pretty well the greater part of the night. During the two following days no untoward symptoms occurred; but on the third day erysipelas appeared in the neighbourhood of the incisions, and extended upwards and downwards over the whole extremity.

The only bad consequence which followed from the erysipelas was the separation of the lips of the transverse incision. So soon, however, as the cause of separation had disappeared, the incision was again drawn together, April 30th, and the edges having been slightly paired, immediate union took place.

May 1st.—Everything progressing favourably; patient eats and sleeps well; discharge healthy and not too copious. Water dressing used.

May 5th.—The arm looks very well, but patient has lost his appetite; complains of headache, constipation; tongue furred and sharp pain in perineo. Ordered, ℞, olei ricini ʒj, and hot fomentations to perineum.

May 6th.—Constitutional symptoms better, but the perineal pain continues.

May 7th.—An incision was made into the perineum, and a considerable quantity of pus evacuated.

May 8th.—Patient is much better this morning, slept well; ate his breakfast; no pain in perineo.

May 9th.—Commenced making slight passive motion in the joint, which is attended with considerable pain.

From this date everything progressed most favourably. The passive motion was gradually increased in extent and violence until the fore arm could be put through all the normal movements (flexion, extension, *supination* and *pronation*). The discharge gradually diminished in quantity, and soon ceased entirely. Patient got fat and strong, and towards the

latter end of May, began to acquire voluntary power in the arm; this rapidly increased until the end of June, when he was transferred from the Brown Hospital, to Camp Dennison, Ohio.

The day before the transfer, I had photographs of the arm taken in different positions for the purpose of showing the extent of motion in the new joint, and the patient's power over it. Some time afterwards I received a letter from the patient informing me that he was about to be ordered back to his regiment in the field, and asking me if possible to intercede for him to prevent his return to duty. I at once wrote to the surgeon under whose care he then was at Camp Dennison, gave him a pretty full account of the patient's history; begged him to favour me with a correct account of the condition of the arm, and, in a postscript, asked if he did not think that a man who had done his duty well while with his regiment, and had suffered so much as our patient had, was entitled to his discharge. As this surgeon was entirely unknown to me, I could not venture to say anything further in reference to the question of discharge. Within a few days I received the following letter in reply:

“ DENNISON, U. S. A. General Hospital,
“ August 3rd, 1864.

“ SIR,—Yours of the 21st ult. was duly received, but absence from my charge a part of the time since, and a pressure of other duties, have caused the delay in answering it.

“ Your operation on Whitten's arm is a complete success. The incisions are about healed, and the motions of the fore arm, with exception of a slight difficulty in supination, are perfect; and this difficulty will be overcome by a little perseverance on the patient's part in using it. Your suggestion as to his meriting a discharge is fully in accordance with my own feelings, but I fear our medical authorities will not view his case in so favourable a light. Excuse my delay in answering your letter, and

“ Believe me, very respectfully,

“ Your obedient servant,

“ (Signed,) J. S. G. PAULDING,

“ In charge 10th Division.”

The next intelligence I received of the case was from the patient himself, dated “Johnstone, Ohio, Feb. 19th, 1865,” from which the following is quoted *verbatim et literatim*:

“ I was discharged about the 8th of last October; I have been at home with my father ever since that time. My left arm is about two inches and a half the shortest; I never noticed the difference there is in the

lengths of my arms till after I came home. I have been at work with it more or less all the time since I came home; it has got so that I can chop wood right smart with it. Any light work I can do as well as ever I could. This I close by saying that these few lines leave me well, and hoping they will find you the same. Your sincere friend,

“WILLIAM WHITTEN.”

The first part of this letter is occupied with strong expressions of gratitude, and apologies for not having, at an earlier day, fulfilled his promise to write and inform me of the condition of his arm.

Commentary. Had this patient preserved full use of his hand, the wounds being healed and the joint flexed, I should not have felt justified in recommending the operation.

Again: had there not existed a good chance of restoring the functions of the hand *as well* as those of the elbow joint, the operation would not have been indicated. But, feeling convinced that the stiffness of the carpal and digital articulations was the result mainly of the compression of the muscles and nerves of the fore arm by the large mass of callus which had been thrown out around the elbow joint, it appeared reasonable that by removing the latter, not only would an opportunity be granted to nature of forming a new and useful elbow joint, but the muscles and nerves of the hand and fore arm would at the same time be freed from the existing obstacle to their functional action.

With regard to the amount of bone removed at the operation, four inches may appear very extensive; but, having had many opportunities of observing the result of this operation as performed by numerous U. S. A. surgeons, I am firmly persuaded that want of success has been attributable (in the great majority of cases) to the fact that too small an extent of bone was removed, the surgeon not possessing a sufficient degree of confidence in the restorative powers of nature. Very many cases have come under my notice, in all of which the result was complete ankylosis; in none was there anything like deficiency of new bone. The amount of shortening in Whitten's case was greater than it usually is, still much better have two and a half inches difference in the length of the arms than to have, *after* the trouble and annoyance of the operation, a *stiff joint*. When the operation is performed on account of disease of the elbow joint, it is not necessary to remove so much of the bone; nor would it be safe to do so, because, in such cases, the restorative powers of nature are not so great as they generally are in cases occurring in military practice.

Whitten, for instance, was a young man of strong constitution and sanguine temperament.

With regard to the incision, there was in this case no room to choose, the large amount of callus rendering the **H** unavoidable. By the straight incision it would have been impossible to expose the parts sufficiently. In the great majority of cases, however, the straight incision will be found preferable.

On this subject Prof. Syme (to whom we are indebted for having in modern times, revived this most valuable operation) says, "the integuments may be divided, either by a single longitudinal incision—as Mr. Park originally proposed—or in the more complicated form adopted by M. Moreau, which was like the letter **H**, the transverse cut being from side to side along the upper edge of the olecranon. The latter method is that which, until lately, I have employed and performed hundreds of times with the most satisfactory result.

It certainly is the easiest mode of procedure, but the former plan has a decided advantage in regard to the after treatment, from not being exposed to the inconvenience which attends the transverse incision if it does not heal by the first intention and allow the edges to separate.

If therefore the circumstances permit its performance the simple longitudinal incision should be preferred, especially in cases of ankylosis, where there is a great tendency to secondary hemorrhage and, consequently, much risk of primary union being prevented."

At least three opportunities have occurred of dissecting, *post mortem*, the parts involved in resection of the elbow joint in cases where the operation had been successful.

The subject is a most interesting and instructive one, but we cannot attempt its consideration at present.

REVIEWS AND NOTICES OF BOOKS.

Shræder Van Der Kolk on the Pathology and Therapeutics of Insanity. Translated by JOSEPH WORKMAN, M.D., Medical Superintendent of the Provincial Lunatic Asylum, Toronto, C. W. (Reprinted from the American Journal of Insanity.) 8vo. pamphlet, pp. 91.

Those of our readers who have had the opportunity of perusing Van Der Kolk's works, cannot but be impressed with their practical and high scientific value. The work before us is posthumous, being a compilation of materials left in the hands of two of the pupils of the illustrious author, Drs. F. A. Hartsen and P. Templeman Van Der Hoeven, who con-

sidered they could not more fitly honor the memory of their master than by giving to the world this little treatise. To Dr. Workman of Toronto we are indebted for a translation into English, of the second part of the work, which the translator states is of the "highest practical importance, as, if we may say so without derogation from the merits of the author, the portion most free from theoretic speculation. The first part is devoted to the anatomy and physiology of the brain, and includes a most valuable section on inflammation of the Dura Mater." The author's classification of insanity, under two great heads of Idiopathic and Sympathetic, is at once simple and comprehensive, and includes all the possible forms and varieties of mental disease met with. Under one or other head each individual case falls. The diagnostic signs in each are peculiar. The position of each case, whether under the first or second class, will be determined by the fact whether the brain is primarily or secondarily affected. Practically this classification is of the greatest importance, as it suggests the location of the physical disorder from which the attack proceeds, or with which it is necessarily associated.

"It has been usual to detail the various sorts of mental alienation according to the variety of their manifestations, to designate them by the terms mania, monomania, melancholia, dementia, and idiocy. This classification is certainly adapted to the superficial distinction of these various forms, and deserves, therefore, to be retained; at the same time I must say I have never found it practically serviceable, since it has its source rather in the mere symptoms of the disease, than its nature and efficient cause. For many years past I have included the different forms of the disease under merely two chief groups, which, with sufficient clearness exhibit themselves, either as idiopathic, or sympathetic insanity; and by peculiar diagnostic marks are readily distinguished; whilst with a therapeutic reference they merit our most serious consideration."

"In idiopathic insanity the brain suffers primarily. Some unusual mental exertion, or some undue excitement of this organ may lie at the foundation, or a violent impression,—a fall, a blow, or under a certain predisposition,—most usually the hereditary,—almost any cause may lead to the development of the malady."

"On the other hand, in sympathetic insanity the brain suffers only secondarily, and the exciting cause lies in other parts of the body,—as the abdomen, or the organs of reproduction. From long continuance of this form, an idiopathic insanity may be developed; and it is certain that recovery cannot in any case occur unless the primary cause is removed. Herein seems to me to consist the chief importance of this classification."

Idiopathic mania is described by the author under two separate heads

of acute and chronic. The acute attack is almost certain to pass into the chronic form, not necessarily, however. This result is more than likely to occur from inappropriate treatment, or, in the words of the author, "after nothing at all had been tried, and the time opportune to recovery, had passed away." Can anything more pertinent exist to the question of the actual necessity of providing the means for the judicious treatment of the insane? Under chronic idiopathic mania, the author includes hallucinations, stupidity, torpor, dementia, and idiocy.

Under the head sympathetic mania, are considered several various forms "according to the different parts of the body, which are the primary seats of the disease, and from which it is extended to the brain, which thus becomes secondarily affected." In this class is included that peculiar condition of the left colon, described as elongation of the organ, and which most writers on this subject have associated with mania. Amenorrhœa, and various uterine derangements in the female and in both sexes, onanism, these are well known fruitful sources of mania. There is included a clear and succinet description of appropriate treatment for, each class, and to the physician is a work of great practical benefit. This little pamphlet will be found of use by the physician in general practice, but more especially will it be useful to him who has devoted his time and energy to the alleviation of this class of disease.

Glaucoma: its Symptoms, Diagnosis, and Treatment. By PETER DRIK KEYSER, M.D. Philadelphia: Lindsay & Blakiston. 1864.

There is perhaps no one subject which has received and engages the attention of those who specially devote themselves to ophthalmic science more than the disease which forms the subject of the little pamphlet before us. While there are few diseases of the eye whose pathology, symptoms diagnosis and treatment present greater difficulties or wider differences of opinion, there is certainly none which tends more surely to that most dreadful of all calamities, viz., loss of vision. When we reflect how insidiously and slowly this affection perfects itself, and how great is the importance of an early and correct diagnosis as regards the prospect of a cure—we cannot doubt but that any attempt to condense, simplify and render practically useful what is known on the subject will be welcomed by the medical public. Such we believe to be the intention of Dr. Keyser's pamphlet—and as such we would recommend it as highly instructive and worthy of perusal. The author does not claim much on the score of originality; indeed he himself informs us that the substance of his work is derived from notes taken while attending the lecture of Professor von

Graefe at Berlin—and those of our readers who have seen Dr. von Graefe's Memoirs on Iridectomy, translated by F. Windsor, Esq., and published by the New Sydenham Society, will no doubt be already familiar with much of what is stated by Dr. Keyser.

The Pharmaceutist's and Druggist's Practical Receipt Book, with a Glossary of Medical Terms, and Copious Index. By THOMAS F. BRANSTON. Philadelphia: Lindsay & Blakiston; Montreal: Dawson Brothers.

A more practical and interesting volume, on its particular subject, we believe does not exist, and we would strongly urge it upon the attention of every druggist and physician in the country, to whom we deem it worth more than twice its cost. Not only are all the preparations of the London Pharmacopœia given, but hundreds of other receipts, all alphabetically arranged, many of them very valuable. Even to the unprofessional the volume is of great value, as it contains many good receipts which are not to be found elsewhere. Among many we would mention receipts for arrowroot jelly, baking powder, beef tea, ginger beer, blacking for shoes, horse harness, &c., &c. The directions and descriptions are briefly but very clearly explained. At the end is a glossary which, to the student, will prove of great value, as the translation of many old directions are given. Mr. Branston, the compiler, has certainly shown much assiduity and investigation in its preparation, and we hope they for whom it is intended (and we believe it is of especial value to country practitioners) will show their appreciation of his labours. The work is got up in the usual creditable style of all Lindsay & Blakiston's medical publications.

PERISCOPIIC DEPARTMENT.

Surgery.

EXCISION OF THE TONGUE.

By JAMES SYME, Professor of Clinical Surgery in the University of Edinburgh.

Some years ago I endeavoured on two occasions to afford relief from disease of the tongue, otherwise incurable, by cutting out the entire organ; but, as both cases terminated unfavourably, I felt no desire to repeat the experiment, and have repeatedly declined doing so under circumstances of a very urgent character. In the early part of November last, Mr. W——, aged 52, from Manchester, applied to me on account of

a very formidable morbid condition, affecting his tongue. From its point to the root it was swollen and indurated, the surface being of a brown colour and roughly tuberculated, so as to resemble the back of a toad. It was also nearly quite immovable, and, from completely filling the mouth, not only preventing articulation, but rendered deglutition impossible with respect to solids, and extremely difficult in regard to fluids. From the same state of matters, there was a most offensive fetor through mucus secreted by the unhealthy surface not being permitted to escape.

The patient informed in writing that he had suffered from uneasiness in his tongue for many years, but that neither articulation nor deglutition was seriously affected until 1862, since which time he had been under medical treatment in London as well as Manchester without experiencing any benefit. As palliation seemed all that could be expected, I offered some suggestions with this view, and advised that no time should be lost in returning home. But soon after his arrival there, I began to receive from the patient very painful letters, reporting aggravation of the symptoms, especially in regard to deglutition, so that death from starvation seemed imminent, and urgently desiring some means of relief. To these appeals I replied that the only effectual remedy was removal of the tongue, and that this could not be done without very serious danger to life, so that the operation promised nothing more than a chance of escape. This slight encouragement brought the patient back, and he arrived here on the 27th of December.

Being thus as it were compelled to make another trial of excision, I carefully considered all the circumstances concerned that might tend to interfere with its successful performance. Of these the one which most prominently presented itself was the prevention of voluntary deglutition that must result from depriving the os hyoides of the power by which it is drawn forwards. In the common cases of cut-throat, where a large transverse wound is made into the pharynx, although the suicide rarely accomplishes his object in the first instance, he still more rarely escapes the fatal effect of pulmonary inflammation induced by irritation propagated from the larynx; and I did not forget that both the patients on whom I had performed the operation in question died from purulent effusion into the lungs. Instead, therefore, of cutting through all the muscles of the os hyoides, as had been done in the former cases, I resolved to retain the mylo-hyoidei and genio-hyoidei entire, and divide merely the attachments of the genio-hyoglossi. I also thought it would be better to perform the operation without chloroform, since the patient, instead of lying horizontally, might thus be seated on a chair, so as to let the blood run out of his mouth, and not pass backwards into the pharynx.

The operation was performed on the 29th, with the assistance of Mr. Annandale, Dr. Sewell, and Mr. Cheyne, to the first of whom I am especially indebted for his able co-operation. Having extracted one of the front incisors, I cut through the middle of the lip and continued the incision down to the os hyoides, then sawed through the jaw in the same line, insinuating my finger under the tongue as a guide to the knife, divided the mucous lining of the mouth, together with the attachment of the genio-hyoglossi. While the two halves of the bone were held apart I dissected backwards and cut through the hyoglossi along with the mucous membrane covering them, so as to allow the tongue to be pulled forward and bring into view the situation of the lingual arteries, which were cut and tied, first on one side and then on the other. The process might now have been at once completed, had I not feared that the epiglottis might be implicated in the disease, which extended beyond the reach of my finger, and thus suffer injury from the knife if used without a guide. I therefore cut away about two-thirds of the tongue, and then, being able to reach the os hyoides with my finger, retained it there while the remaining attachments were divided by the knife in my other hand close to the bone. Some small arterial branches having been tied, the edges of the wound were brought together and retained by silver sutures, except at the lowest part, where the ligatures were allowed to maintain a drain for the discharge of fluids from the cavity.

Next day I visited the patient, and finding him in all respects comfortable, inquired if he could swallow. In reply he pointed to a drinking-cup containing milk, and intimated that he wished it to be filled; then, placing the spout between his lips, while his head was bent backwards, he drank the whole without any cough or sputtering. Having seen this, I felt assured that the result would be satisfactory, and was not disappointed, as everything went on well afterwards. The only inconvenience experienced was from the edges of the jaw being occasionally displaced; but this was easily remedied by an ingenious contrivance of Mr. Wilson, the dentist, who, finding that a silver cap inclosing the teeth, was not sufficient for the purpose, fashioned a shield of gutta-percha embracing the chin on each side, and secured to the metal plate by a wire.

Under an ample supply of nourishment by milk, soup, and soft solid food, there was a rapid return of strength, so that an improvement in this respect was almost daily observable; and before the end of three weeks the patient declared that he had never felt better in his life. He returned to Manchester on the 23rd of January.—*Lancet*.

SPHACELATED FEMORAL HERNIA FOLLOWED BY ARTIFICIAL ANUS—NATURAL CURE.

BY S. J. STRATFORD, M.R.C.S., ENG.

Mr. William M., born at Morton Pound, Cornwall, England, aged 63 years, has been afflicted with inguinal hernia of the right side for upwards of ten years. It even descends into the scrotum, but is always easily reduced. Seven years since he observed a little lump appear on the right groin, in the situation of femoral hernia. It came suddenly, and was attended with a feeling of faintness and sickness; this by degrees subsided, but the swelling never entirely disappeared. After remaining quiet for a time, the part would suddenly increase in size, grow painful, at which time it was attended with constipation, pain in the bowels, and vomiting. This condition generally lasted for a few days, when the bowels would again operate, and the swelling diminish in size, and cease to be painful. He always believed that the constipated condition of the bowels was caused by the state of the tumor. The irritable state of the tumor generally happened several times during the course of the year, at which times it was generally preceded by a frequent desire to go to stool, tenesmus, and irritation of the lower bowel; then would follow the pain, sickness, and constipation. The inguinal hernia was never strangulated, would always return with facility, and never gave pain. For the last few years the patient had resided in the back woods of New Zealand, enjoying good health, but working very hard with heavy lifts and great exertion. Was obliged to leave his farm from the fear of Maorie marauders, who had killed in cold blood several of his unoffending neighbours. He came to Auckland in the month of July, 1863. In February last (1864) he was attacked with vomiting and purging, cases of which were very prevalent at this time. This complaint continued for several days; for it he took some composing pills, which had the effect of stopping the bowel complaint. The vomiting still continued with great pain in the bowels. After the purging stopped, pain commenced in the groin, the small tumor was enlarged, and his wife says became red and inflamed.

I was sent for on the third day, and immediately recognized the symptoms of strangulated hernia. The inguinal hernia was down; this I easily reduced, still the symptoms continued. The swelling, pain, and redness of the tumor in the femoral region pointed to the seat of the disease, which, however, at first sight, appeared more like an inflamed gland than a strangulated hernia. I now felt convinced that the man had a double hernia of the right side, and at the present time was laboring under strangulated femoral hernia. The swelling, redness, and

feeling of fluctuation in the little tumor, which was about the size of a marble, made me believe that changes of vital importance had already taken place in the hernial sac; so that I feared it was hopeless to expect to reduce the incarcerated intestine. An attempt was made, but it gave such pain that it was necessary immediately to desist, particularly as the history showed it had been irreducible for a very long period, the old man saying that it "never entirely went away."

From the urgent nature of the symptoms, I called a consultation, when it was determined to lay open the tumor and relieve the strangulation, if the hernia could not be reduced. With the assistance of Dr. McKinnon, 57th Regiment, and Dr. Wright, the tumor was laid open. The integuments and fascia having been cut through, the hernial sac was exposed, showing a dark plum-colored substance within. On the division of the hernial sac, a thin bloody serum escaped, and it was plainly shown that a piece of small intestine was adherent—vastly congested, amounting almost to a state of sphacelation. A cut was made into the neck of the hernial sac, so large that the finger could be introduced into the abdomen. All stricture was now removed from the intestine, the parts were brought together, and we hoped that the passage of the bowel might be established: not so—for notwithstanding the use of enemata, calomel, and opium, and castor-oil, the bowels continued obstinate, although the vomiting and pain had ceased soon after the operation. About four days after the operation, the intestine gave way at the groin, and a free discharge of feculent matter occurred, which greatly relieved the patient. This discharge, often thin and watery, continued for months; but the wound during this time gradually diminished in size, and became so small that it could be covered by the finger; indeed, at the present time you may see the feculent matter pressed through it, looking like the evacuation of an infant.

To-day (August 27, 1864) the patient said that he had eaten an apple, swallowed the pips, which after a time presented itself at the opening, and appeared arrested in the part, until an effort from behind forced it out with some violence.

A few days since the man informed me he had an inclination to go to stool by the natural passage. I advised him to use the enema. He did so, and found considerable stool to pass, and now he declares that he has two stools daily without the use of the glyster. The wound in the groin is getting less daily, and I have no doubt will completely heal up, and the natural passage of the bowels be re-established. The man is in good health, takes long walks, and is very anxious to go to work.

The unexpected result of this case calls to my mind circumstances

which happened to me when in the backwoods of Canada some twenty-five years since. An old man, of some 50 years of age, vaulted upon a horse to ride a short distance. In the act of mounting he felt a pain in the right groin, and observed a small tumor; was seized with pain in the bowels and vomiting; was put to bed; had some warm drink given him, and hot fomentations applied to the bowels. These means did not relieve him; he grew worse, and I was sent for during the night. When I arrived I found that he was laboring under the symptoms of acute strangulated hernia. The tumor in the groin was about the size of a marble; was very painful to the touch, and he declared it came suddenly. He had observed it occasionally some long time ago, but recently it had not troubled him. The taxis was tried, but the tumor was almost too small to handle. Bleeding and the hot bath were tried. (Chloroform was not known in those parts at that time). The symptoms speedily became so urgent that I resolved to operate. I laid open the integuments, divided the fascia, and opened the hernial sac. I found a portion of small intestine caught in the hernial embrace, and evidently strangulated, by its dark color. It was plainly only a section of the intestine, one side of it incarcerated in the hernial sac. I now divided the stricture, and placing my finger upon the bowel I easily pushed it into the abdomen, when the poor man expressed a desire to evacuate the bowels, which acted freely. The wound soon healed, and the man got rapidly well.

Upon reflection, I am led to believe that this very remarkable case of sphacelated femoral hernia above mentioned was of a similar character to the one just recorded. A section of the bowel only had come down into the sac and become adherent, and that the stools passed through the intestine, while this section was adherent to the hernial sac. Whenever irritation of the bowels happened, which seemed frequently to occur, more or less inflammation of the part resulted, but quickly subsided again. The last attack was far more violent than any of the preceding, hence the inflammation of the intestine was more intense, and caused all the symptoms of strangulation, and made it necessary to relieve the stricture. This being accomplished, the symptoms of incarceration subsided, but the vitality of the intestine was too far gone to permit it to regain its tone; hence mortification ensued, and an artificial anus was formed. As the irritation and swelling of the parts subsided, the old man began to regain tone. His health was considerably re-established, the wound commenced healing, and the feculent matter began to find its way into the lower portion of the bowel past the wound by the section of intestine not included in the hernia.

The more the wound healed the more free was the passage by the bowel, until now scarcely any matter passes by the wound, and the

artificial anus is almost closed, and without doubt will be perfectly cured.—*Med. Times.*

Medicine.

ON THE DISEASES OF THE SKIN, CAUSED BY THE ACARUS.

By BALMANNO SQUIRE, M.B.Lond. Surgeon to the West London Dispensary for Diseases of the Skin; Lecturer at St. Mary's Hospital Medical School.

The effects produced by the presence of the acarus in the epidermis are—*Itching*, aggravated towards evening, in some cases felt only in the evening, and even then but slightly, but in others severe enough to deprive the patient of sleep and rest during the first half of the night. The itching and the scratching that it provokes are to some people not altogether disagreeable. I have noticed that those who describe the sensations produced by scabies as agreeable are usually persons of lymphatic temperament, while to persons of nervous temperament the disease is always tormenting.

One of the diseases that results from the irritation of the acarus is *Prurigo*. By this I mean an eruption of papules (discrete, not confluent) attended with considerable itching of the portions of skin on which they appear; this itching leads to the excoriation of their summits by the patient's nails. They have been described by Willan and Bateman as papules, with vesicles on their tops; but this is an error, since the small drops of serum which exude from the torn apices of the minute pimples are not covered by any layer of epidermis. The prurigo of scabies differs from the ordinary prurigo of old persons, in that the papules are smaller; that the secretion from these summits is sanious serum, rather than blood; that they are more numerous on a given extent of surface, and that the minute crusts which result from the drying up of the fluid that exudes from them are more florid. The usual situations for this pruriginous eruption are the inner aspect of the forearms, the belly, and the inner aspect of the thighs. In the great majority of cases of scabies this papular eruption is present.

Another disease of the skin produced by the acarus is a *vesicular* eruption. The vesicles vary in size from that of a small pin's head to a large bleb. They are seen more commonly on the backs of the webs of the fingers, and on the sides of the fingers, on the back of the web of the thumb, on the palm of the hand, on the anterior aspect of the wrist, and on the feet. The vesicles are absent in about twelve per cent. of the cases of scabies that come under observation. A fair idea, both of the vesicular and the pustular eruptions of scabies, is conveyed by Part IV. of the author's published series of photographs of the diseases of the skin.

A *pustular* disease of the skin is a common result, too, of the presence of the acarus. This eruption I have observed more commonly in the lymphatic and the debilitated. It may be observed on either the hands, the feet, or the nates. The pustules when situated on the hands or on the feet, are of the same average size as the vesicles, but on the nates they often resemble small furunculi. I have even seen small abscesses on the nates of children, due entirely to the irritation of the acarus.

It is by no means uncommon to see patches of *eczema* or of *impetigo*, as the result of scabies; these occur more frequently about the wrists, in the flexures of the elbows, in the axillæ, about the ankles, in the hams, or (in the female) on the breasts.

There is another disease of the skin which the acarus may give rise to—when I say may give rise to, I do not merely mean may reëxcite, but may cause to appear for the first time—and that is urticaria. This, I believe, has not been noticed by any other author. I have seen very severe urticaria form the principal feature of cases which, on careful examination, I have found to be cases of scabies.

Besides the above detailed eruptions, there is another symptom of scabies, which, though less obvious than any of the preceding, is of infinitely greater importance, since it is not only most constantly present, but once recognized is pathognomonic of the disease. The symptom referred to is the track, left by the female acarus in its passage through the substance of the epidermis, the *acarian furrow*, as it has been termed. This presents the appearance of a curved dotted line under the surface of the epidermis, varying in length from the thirtieth to the third of an inch, and assuming the form of a comma, of a horse-shoe, or of the letter S. It may be either white or of a greyish colour. At one extremity of the furrow is a minute, rounded, opaque, white elevation, the “acarian eminence;” from this, with a little address, the acarus itself may be extracted on the point of a pin. It is, however, easy to detach small pieces of epidermis, of about the size of an acarus, where no acarus is present, and I have often seen this mistake made. The itch may be distinguished from fragments of epidermis by several tests; of these the most unequivocal is to place the suspected atom under the microscope, when the well known anatomical characters of the acarus (if acarus it be) will at once reveal themselves; but the microscope is an instrument that we may not have always at hand, and in its absence there are other tests which are scarcely less certain. Thus, if the point of the pin to which the particle adheres be held up to the light, if it be an acarus, the atom will have a semi-transparent and plump appearance; if it be a piece of epidermis, it will look opaque and shrivelled.

An acarus, if placed on a piece of coloured paper and breathed upon, will be seen to crawl along the surface. If it be placed in the flame of a candle, a faint explosion will be heard; this is owing to the soft, semi-fluid body of the acarus being enclosed in a hard, shell-like skin, which bursts under the pressure of the steam generated within; a piece of epidermis on the other hand, noiselessly shrivels up. Scabies is most frequently met with amongst the poor, but is much commoner among the middle and upper classes than it is popularly supposed to be. It is more common with children than adults. It rarely attacks the face or scalp. Its only cause is contagion.

As to the manner in which the contagion of scabies operates, it was formerly supposed that the fluid contained in the vesicles, which appear on the hands and feet, was the source of contagion, but actual experiment has supplanted this theory. Several persons were inoculated with the fluid taken from the vesicles of scabies, and not one contracted itch, whereas a single acarus taken from a furrow was found to be always capable of communicating the disease. It has been thought by many that scabies is ordinarily communicated in this way; but I think it is more reasonable to suppose that it is caught from the ova of the acarus. As the female tunnels her way through the substance of the epidermis, she makes from time to time small air-openings to the surface; the ova that she lays can readily escape by these apertures, and, owing to their extreme minuteness and lightness, adhere readily to any soft substance with which they may be brought into contact, so that it is more probable that the disease is communicated in this way than by means of the female acarus, who rarely, if ever, leaves the tunnel.

Treatment.—If there be much inflammation, it is advisable to defer specific treatment for a day or two, and to have recourse, in the interim, to laxative and refrigerant medicines, and to emollient baths. The specific treatment should be commenced by a thorough soaping of the skin, from the neck downwards, followed by a warm-bath, after which the following ointment should be well rubbed in over every part of the body, excepting only the face and scalp:—℞. Potass. carb. ʒ ss. sulph. sublim. ʒ j., hydrarg. bisulph. gr. ij., ol. bergam. m. iv., adipis. ʒ j. This process should be repeated every fourth day, till it has been undergone three or four times. After the ointment has been applied, fresh linen should be put on, but the same linen should be worn next the skin day and night, till the next application. At the same time care should be taken to disinfect all the patient's clothing, by subjecting it to a temperature of 200° Fahr. This may be done by boiling the linens, and ironing out the other clothes.

—*Med. Mirror.*

Canada Medical Journal.

MONTREAL, APRIL, 1865.

LUNATIC ASYLUMS.

A letter, copied from the *Montreal Herald*, appeared recently in the columns of the *Montreal Gazette*. The editor of that journal assumes it to be written by "a person who evidently understands the subject of Lunatic Asylums." We should say his acquaintance is not thorough, and would recommend that he be sent to one for an indefinite period to improve his knowledge of the requirements of such institutions. There is no necessity for the Government of Canada seeking for a site with a mansion already built, supplied with hot air furnaces, water accommodation, and extensive out-buildings, ostensibly for a Lunatic Asylum. A building for the use of lunatics should be constructed expressly for the purpose intended, and no second hand make shift should for one moment be thought of.

As well might we expect the Government to buy up all the old, worn-out buildings in various parts of the country to serve the purpose of Court-house and gaol. A Lunatic Asylum is not a charity. It is an institution as essential to the well ordering of society as is a Gaol. Many, we might say the majority of cases of insanity are superinduced by evil habits, indulged in possibly for years. The unfortunate victims, in many instances, become so enslaved by the particular vice, as to lose all moral power of self-restraint, and the result is in the end, if not death, destruction, or it may be only temporary disturbance of the powers of the mind. Such is undoubtedly the case with the habitual drunkard—a state well recognized in the present day as one of mental derangement, and one which society is bound, for its own security, to endeavour to arrest by all legal and benevolent means. Cases daily accumulate in which the most wretched crimes have been perpetrated under temporary insanity through drink; and, on the other hand, abundant evidence is obtainable of the permanent benefit to habitual drunkards of isolation and appropriate treatment. How far society is answerable for the neglect of these wretched beings we are not prepared to argue, but unquestionably it

becomes a serious consideration whether it is not a duty to restrain the habitual drunkard, not by pledges or temperance societies, not by Maine liquor laws, or heavy duty on liquor, but by regarding the habitual drunkard as mentally deranged, and condemning him for a time to isolation and care in an asylum specially devoted to his class. A Lunatic Asylum is needed for this section of the country. We regret to be *again* obliged to inform our Government that we are yet without such an institution, and *again* to reiterate the fact (which has been stated time after time for the last twenty years) that the condition of the lunatics in this district, in the cells of our common Gaol, would disgrace the natives of Timbuctoo. The treatment received by Dr. Howard, the medical superintendent at St. Johns, whose efficiency has been acknowledged by the inspectors in their last report, has been simply disgraceful, and we would not be at all surprised were that gentleman to relinquish his charge in disgust.

With regard to locality we cannot see the advisability of placing the institution at an unreasonable distance from our city. Montreal is the centre at which several railways converge, and in summer time is more accessible than any other place we know of from all parts of the surrounding country. There are here two medical schools unsurpassed by any in Canada. In an educational point therefore it is essential, at least expedient, to afford every facility, to those who in a few years must supply our places, to study disease in its various phases. Diseases of the mind, as of the body, are engaging the serious attention and study of the profession at the present day. Many cases of insanity which a few years ago would have been considered hopeless, are now well known to be amenable to treatment. The symptoms are found to yield rapidly and readily when appropriate means with promptitude are employed. What physician worthy of the name, would look supinely on and permit an acute attack of disease to proceed to the sure destruction of his patient, or run into the chronic form, without an attempt on his part to arrest its progress? This argument equally applies in diseases of the mind as of the body. Secondly, we hold it to be a duty of communities to provide the means for the safe conduct and appropriate treatment of disease, especially those affecting the mental condition of individuals. Here we have to deal with no ordinary form of disease; and unless the patient be, so to speak, isolated or removed to a suitable establishment, especially devoted to the care and treatment of these unfortunate cases, he will either die, or the disease become confirmed, the patient for ever after remaining in a hopeless state, with occasional exacerbations and remissions; a burthen to his friends or the community.

THE VACCINATION ACT.

This Act, assented to on the 18th of May, 1861, and which requires the councils of each of the following cities, Quebec, Three Rivers, St. Hyacinthe, Montreal, Ottawa, Kingston, Toronto, Hamilton, and London, and the town of Sherbrooke, within three months after its passage, to appoint public vaccinators, who, at least once a month, are required to vaccinate all those who present themselves (those unable to pay being vaccinated gratis, and the council paying the vaccinator twenty-five cents for each person thus operated upon), has, so far as we have been able to observe, been a dead letter, except in our own city of Montreal. In Quebec, we believe vaccinators were appointed, but we have not been able, though watching somewhat closely, to find any mention of what success, if any, followed their appointment. This Act, though in our opinion deficient in some respects, is a most important one, and the defaulting cities are deserving of censure for having so long delayed putting it in operation. Let our brethren in those cities bring the Act under the notice of the local authorities, and let not the matter rest till its provisions are being thoroughly carried out. It is impossible to over-estimate the beneficial results which would follow a rigid enforcement of even our present Vaccination Act; for it must be the experience of every medical man in Canada, that there are thousands who reach the age of boyhood, and even manhood, without having been vaccinated. How fatal small-pox is when the unprotected are attacked, needs not our pen to tell. Parents in many cases do not realize the great responsibility which rests upon them when neglecting to subject their children to the action of the cowpox. In the mother country this responsibility has been brought home, in more than one instance, in a way anything but pleasant, though we believe a few such examples would do not a little to cause every mother to have her children vaccinated within a few months after birth. We give an instance: Not long ago, Dr. Lankester, the Coroner for Central Middlesex, London, held an inquest on the body of a child, two years and a half old, who had died from small-pox, and who had never been vaccinated. Two other children in the same house, also not vaccinated, had contracted the disease and died. In evidence it was proved that the parents had been served with a notice to have their children vaccinated, which they had neglected to attend to. A verdict of manslaughter was the result. The subject of vaccination is a most important one, and we trust our readers will not fail to impress upon their patients the absolute necessity which exists for their children being vaccinated at an early age. Our attention was drawn to this subject by the presentation to the City Council of Montreal, on the 16th of March,

of the report for the year 1864 of Drs. Leprohon, Ricard, and F. W. Campbell, public vaccinators. This was the third year of their appointment. From the report we learn that during the year 1864 the number of 1403 persons were vaccinated by them in their public capacity, being an increase of 861 over the previous year. This increase is attributed to the distribution of small handbills in every house in the city, giving a synopsis of the Vaccination Act, which distribution was done by the Police Force. "Vaccination is the best known preservative of human life against the contagion of small-pox, and although it has not prohibited children in all instances against a modified form of variola, it is generally successful, and humanity and sound experience alike, call for its continuance. At present the practice of compulsory vaccination is rigidly enforced in most cities in Europe and the United States. * * * * It should also be remembered that whenever small-pox occurs in a family or neighbourhood it is important that all individuals in regard to whom there is any doubt or uncertainty as to the fact of their having been successfully vaccinated, should be immediately subjected to the operation, this being the most certain means of preventing the spread of variolous contagion. Another matter to which they would beg most respectfully to draw the attention of the members of the council is the great deficiency in the statistics of mortality for this city. Montreal, with its large population, should adopt a more scientific method of registration. As now obtained the returns of mortality are comparatively useless with regard to the various causes of death; and if a by-law to that effect were passed, it would have the most happy results, and the physicians of the city would cheerfully comply with its requirements. In Great Britain a most accurate system of registration has been carried out, which is of the greatest use to the public health and sanitary reform. Montreal shall not remain so far behind hand in a matter so important."

This subject of registration is a most important one, and we earnestly hope our City Council will, ere long, move in this matter.

We regret to have to chronicle the death of Alexander Long, M.D., formerly of this city. The sad event occurred after a short but severe attack of pneumonia, at his residence, Bruce Mines, C. W., on the 23rd of February last. Dr. Long was well known as a most skillful, practical anatomist, having acted for several years as prosecutor to Dr. Hunter, of Glasgow. He received the license of the Faculty of Physicians and Surgeons, Glasgow, somewhere about the year 1841 or 1842, and subsequently came to this country. He graduated at McGill University in

the year 1844; and was House Surgeon Montreal General Hospital for several years.

Dr. Long was exceedingly diffident, modest, and retiring, but with all thoroughly honest. His manner was kind, but not prepossessing, and he possessed rare qualities as an anatomist and surgeon. For several sessions he acted as Demonstrator of Anatomy in McGill College; and the College Museum was largely enriched by his painstaking perseverance in his department as Curator to that collection. He leaves a widow and four young children to deplore his untimely removal.

RE-SECTION OF THE ANKLE-JOINT.

Since our last issue, we have received a communication from Dr. Caniff, of Belleville, enclosing a copy of the London *Lancet*, containing a letter forwarded to that journal, previous to our existence, detailing the final result of a case of re-section of the ankle-joint operated upon by him in 1862, and reported in the *British American Journal*, for June, 1862. At that time Dr. Caniff promised to give the final results, and, two years after, finding no medical journal in existence, he was obliged to forward his communication to the *Lancet*. The person operated upon was twenty-one years of age, with a good constitution, and the disease of the bones was due almost entirely to local causes. The operation was performed as follows: A single incision having been made, the following pieces of bone were successively removed: first, the astragalus, one half of it necrosed and the other half disorganized; then the external malleolus, then half an inch sawn off the tibia, but the condition was such as to require an additional inch and a half of both tibia and fibula. The upper half of the os calcis was removed by the gouge; about three inches of bone in length was removed altogether. The leg was put up in a fracture box and the patient did well. Six months after he could walk with the aid of a cane; and a year after he could run with ease; and Dr. Caniff on one occasion saw him mount a flight of stairs three steps at a leap. There is just two inches of shortening, and the patient wears a boot with the sole thickened about three quarters of an inch; the ankle is supported on either side by steel springs, and he walks with a very slight limp. Dr. Caniff claims that he was the first to perform this operation in America, and seems to think Dr. Johnson, of Buffalo, whose article we re-published in our last issue, makes a similar claim. We have examined Dr. Johnson's article carefully, and finding no specific date given when the operation was performed, are not competent to decide the question. It seems to us both Dr. Johnson and Dr. Caniff must have

operated about the same time. To settle the matter, would Dr. Johnson, through the *Buffalo Medical Journal*, give us the date on which he performed his operation.

TYPHUS FEVER.

This disease in its most malignant form has for a number of months been epidemic in Scotland and Ireland. At Dundee, Aberdeen, Falkirk, Glasgow, Greenock, Dublin, Cork, it has carried off hundreds, among them we regret to say, not a few of our own profession who contracted the disease in the course of their professional duties. As the approaching season will doubtless see a number of emigrants reaching our shores, sailing from the Clyde and Irish ports, where the disease is now prevalent, we trust our authorities at Quarantine will examine closely all vessels coming from any affected port. If the disease was to become prevalent with us, during our hot summer weather, which will be soon upon us, we would have great cause to lament our want of forethought. Prevention is better than cure.

Our attention has been drawn to the fact that two graduates of McGill College are, and have been for some time, violating the solemn affirmation they took when they received their degree. One is in partnership with a well known quack, and the other guilty of a constant disregard of the rules of medical ethics. It is our intention to take up this matter at length at an early day, when thoroughly acquainted with the facts; in the meantime we would observe, we think measures should be taken to give Universities the power to withdraw their diploma from those who so unworthily use it. Nothing is so disgraceful, as to knowingly deceive the public, for the sake of paltry gain. They forever lose the respect of their old classmates, and must, eventually, lose that of the public also.

MEDICAL NEWS.

Tom Thumb's baby, according to the London *Lancet*, when in Paris recently, was twelve months old and weighed seven pounds and three quarters. — Sir David Brewster, the veteran philosopher, so highly distinguished for his optical discoveries, read a paper before the Royal Society of Edinburgh, on Monday, 16th January, "On the Causes and Cure of Cataract." He showed the differences between the various forms of cataract, as determined by the composition and structure of the crystalline lens, and suggested that in cases of soft cataract a cure might be effected by injections of albumen into the lens.