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Vol. II.]

MONTREAL, DECEMBER, 1846.

[No. 8.

CONTRIBUTIONS TO CLINICAL MEDICINE.

BY J. CRAWFORD, M.D.,

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and Physician to the Montreal General Hospital.

Case of Dropsy.

I was called to see Mr. S., at the Exchange Coffee-House, a few months ago, at a late hour of the night. I found him lying in bed, suffering much from acute rheumatism, his right arm being quite powerless, and his left nearly so; from this cause he was scarcely able to move in bed. He had also ascites, his abdomen being much swelled, as were also his lower limbs, from anasarca. His countenance was excited and bloated, his eyes staring, and the conjunctiva blood-shot; his stomach was very irritable, and he could not retain any ingesta. He had thrown up some bilious matter, but in general the ejections were merely whatever drink he took; he had constant insatiable thirst, and was very restless, and said that he had scarcely any sleep for two nights. His pulse was small, and about 90, tongue foul.

The hurry of his manner, and his general appearance, conveyed the impression that he laboured under delirium tremens.

He stated that he was a merchant, and had lately arrived from New York for the object of superintending the sales of some merchandize, which he found the parties he had entrusted to dispose of were not doing so advantageously. He attributed his present state of excitement to the journey he had performed in his debilitated state, to his annoyance, and "last (though perhaps) not least," to having drunk too freely, since his arrival, of porter. He stated that his usual habits were temperate. His appearance, however, seemed to contradict his statement; although his recent excess in his weak state might sufficiently account for the present degree of excitement. The asomnia might also be attributable to the severity of his rheumatic pains, or it might, perhaps, with equal propriety, be supposed consequent on his irregularity. However, as neither cause counter-indicated the use of an anodyne, this remedy naturally suggested itself. A draught of solution of acetate of morphia, and tinct. hyosciamus, aa ʒss, was ordered, and

directed to be repeated every three hours, till sleep was procured.

I found him the next morning much easier, and more composed; he had passed a good night, and had slept comfortably. Although his rheumatic pains were easier, his arms were still quite powerless, and he was unable to leave his bed from the swelling of his legs. He stated that he had been many years in India, but was obliged to return to Europe in consequence of liver complaint. About six months after his return, he had so far recovered his health as to be able to resume his profession, and left England for the United States. On his passage he had a very severe attack of rheumatism, which quite deprived him of the use of his upper extremities, and had been under treatment ever since his arrival in New York. He had recovered the use of his left arm, but his right was helpless. He had lately perceived his abdomen and legs swell. His complaints, however, had all been much aggravated by his journey into Canada, which necessity had compelled him to take in his weak state; and being now very desirous to return home, he purposed only remaining until he was sufficiently able to bear the journey. The distension of the abdomen prevented a satisfactory examination of the liver. The urine was free from albumen; general debility, derangement, and loss of tone of the stomach being the most prominent symptoms. His bowels were freely moved by a dose of jalap and calomel, and the anodyne was ordered at night, as before; a liniment to be rubbed on the painful parts. Next morning, I found him still better, and more free from pain. He could move the left arm with tolerable freedom, but was obliged to carry it in a sling—the right quite powerless. He sat up for a short time, but the swelling of his legs and feet prevented him from walking. Although his eyeballs were prominent and staring, there was no appearance of delirium tremens; the conjunctiva had rather a bilious tinge; his constitution appeared quite broken down. He now admitted that, for a great many years, he had been a free liver; his illness, however, preventing him from indulging as formerly, until he took his departure from New York, since which he had been constantly toping. I ordered him a grain of sulphate of quinine three times a-day, the anodyne at night, and the liniment to be used as formerly.

Next morning, to my astonishment, he called on me, having walked up from the hotel. He stated, that during the night he had such a profuse discharge of urine that he apprehended he had got diabetes. His dropsical complaints had almost wholly disappeared. He could now use his left arm freely; his right, still powerless, was carried in a sling. From this time he rapidly recovered, under the tonic plan, and in a few days regained considerable power of his right arm, and laid aside the sling. In about a week he returned to New York much improved in health.

It is a matter of extreme difficulty on some occasions (and frequently even of impossibility), to determine what may be the exciting cause of dropsy. These are so various, and often so obscure, as wholly to be beyond the powers of our discrimination or detection. They unfortunately, too, are often beyond the control of our art, even when ascertained. It is, nevertheless, an object of great moment to determine the cause, if possible; as although many of the pathological changes upon which it may depend may be irremediable, we must, however, on all occasions endeavour to avoid injudicious application of our therapeutic means, lest we seriously aggravate the evil. It may readily be perceived how little applicable is the ordinary routine of hydragogues, diuretics, or diaphoretics on all occasions when we look to the *fons et origo mali*. The varieties of hepatic alteration so frequently inducing dropsy, the different changes of structure in the kidneys or circulatory system, an anemic condition arising from debility, or an exalted tone of the capillaries consequent on scarlatina, cannot be supposed to be amenable to a similar plan of treatment, or equally controllable by the most judicious and well-directed curative means. Induration of the liver may take place to a very considerable extent without our being able to detect it during life; and we often find accompanying that peculiar condition termed cirrhosis (which is so frequent a cause), that although there is considerable induration, there may be at the same time a diminution of its size. The attendant, dropsy, also, is an impediment to a satisfactory manipulation, and may prevent the detection of hypertrophy of this gland. Tumors or indurations of other viscera in the hypochondriac region or neighbourhood, also afford obstacles and difficulties to our arriving at a correct diagnosis. On the present occasion, we may in all probability, with propriety, attribute the dropsy to an atonic condition of the absorbents, originating in the state of debility of the general system. The fortunate issue of the case, however, precluded any post mortem examination, and at the same time proved that the dropsy did not depend on any permanent pathological cause.

Montreal, October 21, 1846.

POISONING BY VEGETABLE OILS.

By THOMAS REYNOLDS, M.D., Brockville, C.W.

Daily instances of the dangerous consequences of an unrestricted traffic in drugs, by persons ignorant of their medicinal powers, come within the notice of the faculty in Canada West; and it is only to be wondered at that we do not more frequently hear of fatal results from the quackery and intermeddling of the wandering horde, who, in so many ways, contrive to impose upon an ever gullible public. One smooth-tongued Yankee sends "sugar-coated pills," wondrously palatable, to the real or fancying invalid; another follows in his wake, posts up his bills or circulates his pamphlets, advertising some new "arcanum," with matchless virtues; a third exhibits some Indian panacea, prepared from some "traditionary recipe of the Lost Tribes," and possessing "all-the-maladies-that-flesh-is-heir-to"-curing properties.

I might go on to speak of the Thompsonian doctor declaiming against mineral preparations, and proclaiming the wondrous powers of "our native herbs," aided by the universally applicable process of steaming; the travelling vaccinator, daily bringing into disrepute the valuable discovery of Jenner; and others of an equally dangerous tribe; but I have, at this time, to speak of the "essence pedlar," whose wares would be innocuous enough, if confined to external application; not so, however, when internally administered, as the following cases will show; and they are but a specimen of what is constantly occurring.

M. B. came to his death under the following circumstances, as appeared at the inquest a few days ago:—An "essence pedlar" was displaying his bottles in a tavern in the town, about 4 p. m., when deceased, who was present, and had been for several days in a semi-intoxicated state, took up a bottle said to contain oil of winter green (*pyrola umbellata*), and began tasting it. He was told by the pedlar, who, by the way, was not himself quite sober, that if he took much it would certainly kill him. He replied, "The d—— himself couldn't kill me," thereupon swallowing about half an ounce. The pedlar said to the bystanders, "That much would kill me in four hours," and immediately left the tavern, offering four times the usual charge to be ferried to the south of line 45. Deceased soon began to complain of pain and uneasiness about the stomach, vomited a little, and then retired to a bed-room in the tavern, seated himself in an arm chair, and appeared for some time to be stupid and suffering pain. He was allowed to remain in this state till about 8 p. m., when, upon going to the room, one of the domestics found him dead. He was still seated in the chair, his mouth firmly compressed, and his hand grasping his stomach.

I was called upon to examine the body next morning, in conjunction with another medical man. There was a strong odour of winter green from the body; the lips were blue and compressed, and the countenance exhibited the appearance of his having suffered some pain; the abdomen was but little distended. Upon removing the stomach carefully, I proceeded to lay it open, and found about half a pint of serous fluid, with a strong odour of winter green. The villous coat of the stomach presented a highly inflamed appearance, and was in many places quite destroyed, the mouths of the vessels lying open and bare. The work of destruction extended for about two inches beyond the pylorus. At the cardiac orifice of the stomach there was every appearance of incipient gangrene. Altogether there was quite enough in the stomach to account for the man's death. His intemperate course of life had produced the usual large liver, and probably would in part account for the diseased state of the stomach. Upon diluting the contained fluid with water, the oil, which previously was not very distinguishable, rose to the surface and floated on the top. I procured a phial of essence of wintergreen, sold by the same pedlar, and diluted with water, but the oil did not separate; so that there was pretty clear evidence that the oil was the substance taken. We were of opinion that a fatal result would have been produced in a man of temperate habits, after taking such a quantity of this oil; but that in the present instance, the dissipated life of deceased had to do with the rapid termination of his existence; and the jury returned a verdict accordingly.

No 2.—A simple-minded farmer a few months ago was desired to make use of cedar oil for rheumatic pains. He was desired to rub it along the spine and to take "a little" inwardly. Supposing that if "a little" was good, a large dose would be better, and being told by the pedlar that it was quite safe, he swallowed, as near as could be ascertained by the appearance of the phial, three drachms of this oil. As might be expected, he was soon seized with violent pains in the region of the stomach, strong convulsions were produced, and it was only by prompt and energetic means that his life was saved, after evacuating the contents of the stomach, by means of an emetic and giving warm demulcent drinks. I found it necessary, from the strong symptoms of inflammation of the stomach, to draw blood from his arm, and to use topical depletion freely; and this blood, after being removed to another department, where there was no cedar oil, and where there could be no odour otherwise communicated, retained the odour quite perceptibly for several hours.

It was several weeks before the man fully recovered

from the effects of the dose; and I am quite convinced that had there been no interposition of medical aid, and that soon after the dose was taken, this poor man, as in the case of the oil of wintergreen, would have paid for his folly by terminating his existence in a few hours.

I might give you a few cases more of a similar character, but I think I have given enough to show the danger of allowing such idle vagabonds to prowl about the country, ignorant and reckless of the fatal results of their traffic.

Brockville, Nov., 1846.

A CASE OF ENCEPHALOID OR PANCREATIC TUMORS IN THE ENCEPHALON.

By S. C. SEWELL, M.D.,

Lecturer on Materia Medica, University of McGill College, &c.

John Montgomery, æt. 31, in passing by the polling-booth in St. Mary's Ward, during the municipal elections in March last, received a blow from a bludgeon on the left parietal bone, which knocked him senseless: on recovering, he with difficulty reached home, leaning on his wife's arm. He was confined to bed for two or three days with severe headache, and was slightly treated. In a week or ten days he returned to his work, but always complained of pain on the left side of his head, and a sensation as if water was trickling and gurgling through his head. About three weeks before admission to the Hospital, he complained of great weakness in the limbs, his memory became rather defective, and his consciousness impaired. He again received some little treatment, and by the advice of his medical attendant (the symptoms having gradually increased in intensity), he was removed to the Montreal General Hospital on the 22d September last. He with difficulty advanced his legs as he was supported to his bed between his wife and the orderly. I saw him one hour after admission; he was lying on his back with his arms and thighs extended laterally at right angles to the body, which was the position he maintained to the last, except when convulsive jactitation threw his body half out of the bed. The left pupil was natural; the right dilated, and the eye everted, which had not been the case in health. The tongue was slightly loaded, and the pulse little accelerated, and not otherwise remarkable. Consciousness very feeble; after a long pause, during which he seemed to be collecting his thoughts, he answered "yes" or "no," to three or four questions. He made water freely, but his bowels had not been moved for ten days. He was ordered three drops of croton oil, and to be cupped at the back of the neck.

23d. Oil had operated well; was more conscious,

answering more freely; other symptoms the same Ordered an incision to be made along the mesial line of the scalp, and peas inserted.

24th. Consciousness gone; pulse much accelerated; both pupils dilated; when raised in bed was invariably seized with convulsions.

25th. Moribund.

Autopsy.—On removing the calvarium, the encephalon dilated visibly. Two tumors were observed of the size of an almond in the dura mater on each side of the longitudinal sinus over the middle lobes of the brain. They had caused absorption of the inner table and diploe of the parietal bones. On cutting into them, they were found to consist of enlarged glands of pacchioni, and vascular and fibrous tissue. On opening the great arachnoid cavity, the membrane was found to be *perfectly dry*, the surfaces adherent in many places by fibrous bands, most numerous over the left anterior lobe; dural layer was very pink from the extreme injection of the cellular tissue connecting it with the dura mater, while the pial layer presented numerous opaque patches. The convolutions of the brain were flattened. On exposing the left centrum ovale minus a tumor of the diameter of half a crown was seen in the anterior lobe; it appeared like a piece of pancreas in structure, but of a light liver colour; it was four lines in thickness; the centre was softened, and contained a very yellow pus. On cutting through the centrum ovale majus, four similar tumors of less size were ranged along the right hemisphere, two suppurating in the centre, the others entire. The substance of the brain was fluctuating over the lateral sinuses, and on opening the left one a large quantity of sparkling, limpid and colourless fluid gushed out. A tumor, of the size of a pigeon's egg, and similar to the preceding, was found adhering to the left corpus striatum. The optic thalamus of the same side fluctuating, it was opened, when abundance of pus flowed out of a bright yellow colour; the cavity was of the size and shape of the yolk of a hen's egg. On examining the sac of the abscess, portions of pancreatic tumor were found adhering to the sides, leaving no doubt in my mind that one of these tumors had been formed in the substance of the thalamus, and had been converted into pus. A similar tumor of large size was found in the left lobe of the cerebellum, and another in the substance of the left side of the pons varolii. A ramollissement of the size and shape of a large thimble was found in the right posterior lobe of the cerebrum.

I regret much that I have not been able to procure a more satisfactory account of the case previous to admission to the Hospital, or that I had not had the case

longer under my charge, in order to have watched the symptoms.

Montreal, October 27, 1846.

THE POTATO DISEASE.

To the Editor of the *British American Journal of Medical and Physical Science*.

SIR—As I perceive by the *Miscellaneous Department* of your valuable Journal, that you are willing to receive stray communications from even the *unprofessional and unlearned*, I beg to offer you the following desultory remarks, hinging on the rather unsatisfactory article which appeared in your last Number, "*on the Potato Disease*," in the hope of thereby drawing forth some more erudite and conclusive communication on a subject of such vast, nay, vital importance, to a large proportion of the human race.

As justly remarked in the article alluded to (which it appears you derive from the *American Journal of Science*), little has yet been done on any organized plan in America,* but in Europe the case has been very different, for, while in Holland and Belgium committees had been appointed to collect *facts* calculated to throw light on the nature of the Potato Disease, and in Germany the celebrated Liebig, among others, had turned his attention to the subject, a number of French Philosophers, both alone and in concert with the National Central Society of Agriculture, had engaged in the same object; and the British Government had sent to Ireland a special Commission, composed of three distinguished scientific men, to obtain as much information as possible on the nature and extent of the disease; and a still more extended scheme had originated in Scotland, where the subject was taken up by competent observers, in its

* It may be proper to note here that the same appears to be equally the case in *British North America*, at all events in Canada. Although an occasional paragraph in the public prints intimates the progressive, "rise and spread," of this unaccountable dire disease in every part of the Province; and the *Hamilton Gazette*, in particular, lately went so far as even to state that "*The rot among the Potatoes is universal, we believe, throughout the Province, and the probability is that before New-Year's Day there will not be a potato to be had in this section of the Province at least*;" and late accounts from Cabourg seem to hold out nearly the same gloomy prospects. Now that a Provincial Board of Agriculture has at last "taken root" in Upper Canada, it appears to me that that body ought immediately to originate a correspondence with the different Districts, calling for *correct* information on the subject, and that a similar step should be taken in Lower Canada, through the medium of some central influential District Society; say, that of *Montreal*; and I am sure that it could not fall into better hands than such men as its present President; and it would add not a little to the certainty of success were Mr. Edmundson, the Editor of the *British American Cultivator*, on the one hand, and Mr. Evans, the Editor of the *Canadian Agricultural Journal*, on the other, invited to act as corresponding Secretaries on this occasion.

several branches, as connected with *Botany, Meteorology, Entomology, and Chemistry*,—but whose investigations, it would seem, were still only in progress. In the mean time, in spite of those imposing, high sounding demonstrations, the awful and mysterious pestilence in question, which can only find a parallel in that dread inexplicable scourge the *Indian Cholera*, has been a second year spreading its baneful influence over both hemispheres, as if in utter derision of the laboured researches of science and philosophy! You will, perhaps, smile at this bold and somewhat ironical apostrophe; but the fact appears to be, that the complex agency of various branches of abstruse *science* had been imposingly brought into the field, when the patient investigations of the humble, unlettered, practical agricultural observer would, perhaps, have been more effectually employed; and hence we find a host of *scientific* conclusions *alone* arrived at, of the most puzzling and contradictory character, so much so, indeed, that it does not yet appear to be satisfactorily determined *in what form the disease first attacks the plant*.

Thus, for instance, while a great number of observers have considered that it is first seen in patches of dark coloured "fungus" on the leaves, thence gradually spreading down to the *tubers*, and think they have detected the spores of the fungus passing down through the stem in the ordinary circulation of sap; others, on the other hand, adduce well authenticated instances where the *tops*, or vines, have remained *green and flourishing*, while the *tubers* were much *diseased*.

Again, all agree that the *nitrogenous* compounds in the *tubers* were affected; and Liebig and others have gone so far as to refer the origin of the disease to a peculiar state of these constituents; and the Dutch commissioners of Groningen, M. Payen of Paris, and Mr. Phillips of London, and many others, ascribe to the *excessive moisture and sudden changes* during the last two years, the *predisposing* of the plant to the attacks of *Fungus*; while in the West of Scotland, where the summer of 1845 was considered *rather a dry one*, the Potatoes were found as much affected as on the east coast, and three or four of the most Northern counties remained *entirely free* from the disease; at the same time that in Renfrewshire, Potatoes lifted and stored between the 5th and 15th of September remained sound, while others lifted and stored, from the same field, on the latter date, were not two days in the house before they were found tainted and decaying, as was also the case, before the end of the month, with all that were left in the field;—all *facts* opposed to the theory of a peculiar *atmospheric* influence, and thus leaving the cause as much a mystery as ever.

Finding themselves baffled in their endeavours to dis-

cover the origin or cause, the different commissions, as well as many other scientific individuals, seem to have busied themselves with much earnestness, but not much greater success, in suggesting various remedies and preventives, among which were change of seed, the application of Gypsum, and hot slacked lime, and the "greening," or exposing to the Sun, of Potatoes intended for seed, and the use of saline and other manures to the growing plant. But the preservation of the stored crop during the winter naturally excited the deepest interest, and led to numberless proposed methods, among which, no doubt, were many careful experiments and arrangements actually adopted by practical agriculturists which produced very beneficial results, though the aggregate may have more or less proved utter failures.

In this dilemma, like the writer in the *American Journal*, we might be forced to conclude that the origin and causes of this disease are at present unknown, that its mysterious marks have appeared suddenly on two Continents separated by wide oceans; under heat and drought, rain and cold, on wet and dry, light and heavy soils; at every elevation, and in every variety of Potato; and that those who have most carefully investigated its peculiarities, and most widely examined its range, are most undeceived as to its cause,—had not observations been fortunately made since, to which I would now call the attention of your readers, ascribing, with every appearance of reason, if not absolute proof, the first production of the disease, (on the Potato plant), to the effects of the poisonous depredations of swarms of minute *insects* instead of *vegetable fungi*,—whatever may be the peculiar epidemic agency by which it afterwards becomes so universally disseminated; and for this interesting and important information we are chiefly indebted to that highly useful and popular, though comparatively humble, periodical, the *Gardeners' Chronicle*.*

According to this authority, the prospects of the present (or now rather the late) Potato crop in Great Britain and Ireland, unfortunately indicate a total failure, and in proof of this he furnishes the following melancholy authenticated general view of the state of the crops in different parts of the United Kingdom, at the end of July.

Cork—Potatoes in every field exhibiting symptoms of disease; tubers small and discoloured.

Cornwall.—Crops with few exceptions, shewing disease as strong as last year; some raised from sets imported from the Azores, not yet affected.

Devonshire.—Every body hurrying up their early potatoes. Crops all diseased, and the failure predicted to be greater than that of last year; a sound potato hardly to be met with.

* See also *British American Cultivator* for September and October; the intelligent patriotic Editor of which makes some excellent remarks on the subject.

Isle of Wight.—Disease has made its appearance, but not general.

Mid-Lothian.—Seedlings of last year vigorous, as also crops from sets procured from the North and West country, and some from Rio Janeiro.—Many fields look miserable which had been planted with diseased tubers.

Norfolk.—All varieties affected nearly alike. Those manured with lime the worst in one instance. Disease spreading rapidly.

Perthshire.—Several fields much diseased. One of some acres a perfect wreck, and others in the same state; disease spreading fast.

Shropshire.—Crops generally affected. One field a month ago flourishing, now a pitiful spectacle; the leaves entirely stripped from the blighted and fast-decaying stems, and the tubers near the surface discoloured.—Winter sorts presumed to be a total failure.

Surrey.—Disease spreading rapidly. Those on poor soils least affected.

Worcester.—Disease of last year again; but plants in garden looking so well that if August proved dry hoped the calamity would not be so great as anticipated.

Wigtonshire.—Disease universal, and proceeding rapidly.

Wiltshire.—Disease spreading rapidly; and varieties which last year escaped comparatively uninjured, this season affected.

Yorkshire.—Early crops free from disease; 2d earlies a fortnight ago sound, now with leaves withered as in Nov.—stalks decaying—tubers all shew the spot. Winter potatoes in full flower, (22d July), with no disease discoverable.

After taking this gloomy view of the subject, it affords some relief to be able to approach something like a tangible practical conclusion respecting the origin of this appalling disease, in the following interesting extract of a Communication in the same well conducted periodical:—

The Potatoe Disease.—I have watched this peculiar visitation with much interest now for more than a twelvemonth, and although its reappearance has been doubted by some, it now begins to be generally admitted to have actually taken place, and to be carrying destruction into every quarter. I have not seen a piece of Potatoes in a cottager's garden, a farmer's field, or any other place, but what is grievously affected with what is and has been termed "the disease," viz., ulceration, gangrene, putridity, mildew, and every form of mischief; and the effluvia is very disagreeable in every quarter.

I have the most abundant crops of Potatoes from autumn-planted sets, but the haulm and foliage of none are free from the pest, or ever have been, though to a casual observer they appeared all that could be wished, luxuriant and healthy. I had a beautiful bed of seedlings, and a quantity planted out in due time are growing away as luxuriantly as from a good sized tuber; they are all diseased, and have long been so, although the seed was brought from Ireland, and advertised as having been saved from plants free from disease. They were sown by me on a healthy, sweet, well prepared piece of ground, and planted, too, where a Potato to my own knowledge had not been grown for these last six seasons—if ever previously. I have observed that all those manured with charrings, soot, and lime, are the last to be attacked in the stalks and foliage: and I have not as yet found a decayed or affected tuber to outward appearance amongst those manured with the above materials, but I will look sharply after them on taking up the crop, which will very soon now take place, as I have long since burnt up all the stalk and foliage. I shall, as I did last year, dress all the Potatoes as they are taken up with the above materials; indeed I have all the early crops already done; but then it is of but little use unless my neighbours also put an effectual remedy into practice.

The real cause of all this destruction amongst the Potato crops is a very small insect of a light yellow straw colour, with a small pointed head with horns, and it has six legs. This appears to me

to be the female, the male is something larger, of a darker colour, having wings and four golden coloured strips on each side of its body: these insects are remarkably active in their movements, puncturing the ribs and other parts of the under sides of the foliage of the Potatoes, where they may easily be discovered with, or by the application of a good glass; and if the stalks and green leaves are placed in a good position in respect to the reflection of a good clear light, &c., both the insect, their wood and bunches of eggs; may readily be discovered on their stems, stalks, foliage, or tubers, that are to all appearance to a casual observer healthy and unaffected; gangrene, putridity, and mildew take place, according to atmospheric and other causes, very quickly after those destructive have made punctures, which they do astonishingly quick, proceeding on to more healthy parts. This will be clearly visible with a good microscope.

This conclusion is founded on long and close observation; I collect foliage and stalks from the most healthy plants, and if the above described insect is to be discovered on any part, the crop will very early show symptoms of disease; the full-grown insect may be observed with the naked eye, although its shape and limbs cannot be seen. By taking a handful of Potato-stalks and leaves, and placing them in a vessel of water, and covering the whole with a bell glass, the whole progress of both insects and disease will very readily and easily be discovered by a watchful observer. This morning I was looking through my microscope at the industry of two I had enclosed on a Potato-leaf. Their activity in making punctures is astonishing; they seem to stay a short time to suck out the juice, as one of them made five punctures; and the other two, in less than a minute and a half, all of which were clearly observable: some of the Potato foliage I have seen thus punctured on the underside as quickly as a village green would be with a drove of pigs without rings in their snouts, and it has a somewhat similar appearance in one stage. It is of little utility to search for the offender, or cause of the disease. Where it is already visible to a casual observer, in the shape, blotchings, gangrene, putridity, mildew, &c., the real cause will not then be found. The real offenders must be searched for on the most healthy parts, and if they are there to be found, the crop is sure to be considerably injured, if not a total failure. I discovered the very insect above described last year, but I could not imagine it to be the cause of the evil; but its again making its appearance this year so early in the hot-houses, pits, and frames, hooped beds, borders, quarters, and every field and garden, induced me to have a very strong suspicion of him, and that this is the real cause of all the mischief I am fully satisfied. Where soot-water and char coal-dust is applied, it either kills or drives them away; but as to Tobacco-smoke, it does not seem to take any more effect on this insect than it would on an old Chelsea pensioner. Whether it is a small locust or thrips I cannot say; but as to its ravages, there may yet be hopes that they may be stopped, and that this useful vegetable will not be wholly lost to the country. Atmospheric changes and variations of seasons have an astonishing effect in retarding or entirely stopping the ravages of insects.

After this clear, lucid, and to my mind highly satisfactory investigation of the origin and progress of the disease by so well informed and careful a practical observer, it might be considered altogether unnecessary to superadd another word, until further accounts from Britain shall have reached us; but as even the best evidence is strengthened by corroborative testimony, I will venture to adduce the following opportune additional proof which has lately come to my knowledge; namely, that *Mr. Balkwell*, a respectable Chemist of Kingsbridge in Devonshire, has addressed a Communication to the *Secretary of the Royal Agricultural Society* on the same subject, in which he says,—“The Potato disease is spreading in this locality more, if possible, than last year; and as I imagine that I have, beyond a doubt, discovered the origin of it, I am desirous of putting you in possession of the facts, which I will do in as concise

a form as possible. I planted some perfect seed in my garden that had lain in the ground all winter, and I believe a potato was never planted there before, so I determined to watch for any symptom of disease. I observed the stalk first eaten a little at the top, and soon after a number of *green bugs* as large, or nearly as large as a common house fly, made their appearance. A few days after I noticed the disease in that part where I observed the bugs; and after getting one or two stalks much diseased, it seemed to spread very rapidly. I then saw one of the insects void a greenish fluid, and I took a perfectly healthy leaf and smeared it over it. In 12 hours it was spotted in many places, and in 24 hours the spots were nearly as large as peas; and in double that time a mass of disease. I then practised the same experiment on a growing healthy stalk, and one apart from the disease. In a few days it was perfectly withered and rotten. I then mounted on horseback and rode many miles into the country, and in every instance I found the *insect* wherever the *disease* appeared; but amongst the healthy ones there was not a vestige of one to be seen. I shall be most happy to afford all the information in my power on this most serious calamity; but from my experience it appears to me to be quite evident that the disease is contagious; and that one or two stalks, and as many insects are sufficient to infect an entire field. *These insects leave the plants as soon as it becomes diseased, which will account in a measure for its not being discovered before.* If you wish I will procure the insect and send it to you; I had many confined, but they are all dead."

After this unreasonably lengthened intrusion upon your valuable columns, it would be unpardonable to add more, prolific though the theme may be. I beg therefore to bring my desultory observations at once to a close, with one more simple observation—namely, that it would appear as if the learned investigators of this dreadful pestilence had, "some how," been strangely mixing up "cause" and effect; and that, therefore, from such "confusion worse confounded," little satisfaction was to have been expected. At least such may very reasonably be inferred to have been the case, when we learn, by the last accounts from England, that at the last meeting of the *British Scientific Association* in September last, the Potato disease engaged the attention of the *Botanical* section for one day, when *Dr. Buckland*, after a long discussion, summed up with declaring, "that he could not tell what the disease was, or how it could be cured; but that he thought it arose from the *debility* of the root; but the fact was, they were possessed of less information (!) now than before the Government Commission commenced its inquiry!" In spite of all this, however, let us indulge a

fervent hope that the origin of the Potato disease being at last ascertained, as stated above, *science* may now be enabled to suggest some measures to palliate, if not counteract its influence, and that it may, at worst, prove only of temporary duration,—like the dread ravages of that still more inexplicable scourge the cholera; or that if destined to become an uncertain periodical curse, its visitations may be either few and far between, like the more limited devastations of the Locust and "army worm,"—or that, as is the case with those more permanent minor agricultural pests, peculiar to certain plants, such as the *wheat* (or *hessian*) fly, the *turnip fly*, and the *pea bug*, or even that destructive *fungus* the *rust*, some means may yet be discovered for either arresting or preventing its future ravages.

In the mean time believe me to be, though only a humble gleaner in the field of science, a thorough friend to agriculture, and particularly that of Canada, and your very obedient servant,

R. L.

Montreal, November 26, 1846.

New Elements of Operative Surgery, by Alf. A. L. M. Velpeau; translated by P. S. Townsend, with Notes, &c., by Valentine Mott, M. D. New-York: J. & H. G. Langley.

We have received only the Second Volume of this great work, but from its examination we hesitate not to say, that the whole must be the most complete and elaborate treatise on Operative Surgery, in any language. The present Volume contains 992 pages, closely printed on large Octavo, and there is yet a third to be published. Our readers may, from this circumstance alone, form an idea of the degree of care, research, and learning, devoted to each article. The writings of Velpeau possess one characteristic which distinguishes them from those of his countrymen, viz., that they are not compiled from the Medical literature of Paris alone, but comprise everything that is new or valuable in the productions of German, British, American, and Italian authors—hence the present treatise must be regarded as exhibiting the actual state of Operative Surgery in the present day. The additions and notes supplied by Dr. Townsend are most valuable. The present Volume contains, likewise, an account of all the great operations performed by Valentine Mott, a name that must be revered and honoured, wherever Surgery is cultivated as a Science.

It would, of course, be absurd to attempt an analysis of such a work as that before us, but we earnestly recommend our readers to purchase it, and we doubt not, they will derive satisfaction and improvement, from its perusal.

PRACTICE OF MEDICINE AND PATHOLOGY.

DISEASES OF WORKMEN ENGAGED IN MAKING LUCIFER MATCHES.

This subject has attracted a good deal of attention in Germany and France, and as we have in this country similar manufactories, it may be of some use to state what has been noticed concerning it.

An interesting communication was published in the Medical Gazette of Strasburg, in 1845, by Dr. STROHL. He states, that about a year previous, a female was received by him into the hospital, whose inferior maxillary bone was completely denuded of the soft parts, and its surface was grayish, rough, rugous, and covered with a fetid suppuration. She informed him that she had been for many years engaged in making chemical matches, and had thus contracted the disease. After remaining about a month, she left the Hospital, and died soon after.

Dr. Strohl could scarcely, from this solitary case, imagine any connection between the disease and its assigned cause, but in June, 1845, he was consulted by another female aged twenty-four years, in a similar condition. She had laboured during five years in the manufactory; her particular occupation being to dip the matches into the phosphoric mass. During all this period, she had experienced no inconvenience. She then left the establishment, to assume another occupation, which, however, it is added, was not laborious. In three months after leaving, she experienced violent pain in the right upper jaw, which was soon succeeded by swelling and abscess of the gums. Eight teeth in succession became rapidly carious, and were removed. This had some effect on the swelling, but it soon increased again, extending to the cheek and part of the neck.

According to the patient's account, the suppuration at its commencement had a strong odour of phosphorus.

When first seen by Dr. S. she had been eighteen months away from the manufactory. Six weeks previous to this time, she had been brought to bed, but did not suckle the child. Pregnancy on the whole appeared to have proved favorable to the disease, but on new examination, there was found to be a necrosis of the superior maxillary. Various remedies were employed. Cod-liver oil was one of them, but she could not continue its use. Iodine internally and a solution of creosote for an injection, to the fistulous opening, with chloruret of lime, gargles, proved successful in arresting the progress of the disease, and restoring the parts to a healthy condition.

Two additional cases presented themselves to Dr. Strohl, in July of the same year. One, a female aged twenty-two, had been two years employed in the same manufactory as the preceding patient. Her health had continued good until the last two months. Then the gums began to soften and swell—violent pains in the teeth of the upper jaw followed, with swelling extending over the whole cheek. The teeth becoming carious, fell out, and a fetid suppuration proceeded from the sockets. On examination, the bone was found largely diseased.

In the other instance, a female also, aged twenty-two, had been employed six years. Her particular business was to make up parcels, but this was done in the same room where the matches were dipped. At first she experienced a defluxion from the nose, which soon became permanent. At the end of three years, her face began to swell and she then left the business. The swelling gradually increased, and she entered the hospital. Several teeth were extracted, with but little relief. She appears to have repeatedly left and returned to the hospital, with the swelling continuing, until at last an abscess formed in the superior maxillary bone, which left it carious.

In addition to these, Dr. S. also knew of three others. Death ensued in two instances, and the third was cured.

The information that he obtained was not very satisfactory. There were two manufactories of these matches; six of the diseased came from one and but a single person from the other. In the first, the work was for a long time done in a small chamber, but the persons employed are now transferred to a more spacious apartment. Few remain uninterruptedly in the business; they come and go for a longer or shorter interval. As the phosphoric emanations are very irritating, a great number are taken with cough, which sometimes is so severe as to oblige them to leave off work. Pain in the teeth and serous catarrhs are also common. Indeed, the above seven cases all commenced in this way, and it will be observed that in one instance the affection of the bone did not

occur until a considerable time after leaving the establishment. The nature of this, it is difficult to characterize; it is not a simple caries, nor is it a simple necrosis; the soft parts detach themselves from the bone to a large extent and leave below a bony, gray, rough, but solid surface, and a gray, fetid suppuration exhaloes. After an uncertain period, this separates, without any appearance of new bone being formed.

Dr. Strohl does not doubt the affinity between the employment and the disease produced. How else are we to explain the great similarity in the symptoms? If it be urged, that out of fifty workmen, only six have been attacked, he replies that all of these last have been long engaged in this occupation, while most of the others were so only temporarily. It is possible that the disease may still break out in these. At least one of the patients informed, him, that three others were now labouring under permanent fluxions, and she doubted not, but that they would be similarly attacked.

Dr. S. finds some difficulty in explaining the mode of action of these phosphoric vapours. The affection is purely local; no general symptom precedes it; no other part of the osseous system, except the mouth is attacked, and the general health is not affected, unless the suppuration be very profuse. In his opinion, the vapours of the phosphorus become changed, by contact with oxygen, into hypo-phosphoric acid, and this breathed in, is dissolved by the saliva, and becomes phosphoric acid. Again, this last acid is frequently produced by the combustion of the phosphorus, since it often happens that the vessels in which the masses of phosphorus are melted take fire, or again, the matches when prepared, will also frequently inflame.

This acid, then, when dissolved in the saliva, renders it corrosive, and as the saliva rests longest against the gums, these will imbibe the liquid acid, which in turn will attack the teeth, and filtering down, at last reach their sockets. This explains also why the tongue is not affected, although the gums and cheeks are. The tissue of the tongue is probably more refractory; at all events, the saliva on that organ is more rapidly swallowed or rejected, than that at its sides or retained in the various cavities. Hence also the nasal cavities and the bronchial membranes are not affected. In the first, the acid meets only a small quantity of fluid, of a viscous nature with small dissolving power; in the bronchite, it is the same, and as the passage of vitiated air must be here very rapid, the solution will be small in quantity. Still the habitual cough of the workmen proves the irritant quality of these vapours.

At the meeting of the Royal Academy of Science of Paris, held February 16, 1846, Mr. T. Roussel presented a memoir on the same subject.

Many physicians, he remarks, have already noticed diseases produced in this manufactory. Gendrin has spoken of the severity of the bronchitic attacks among the workmen, and several German physicians are of opinion, that necrosis of the jaws originates from the same cause.

After a careful examination of the workmen in the French manufactories, he found that cough and bronchitis existed with more or less intensity amongst them, and also that diseases of the gums and maxillary bones, terminating in necrosis and sometimes in death, were not uncommon. So far as he could ascertain as to the last complaints, they were not ascribable to syphilis or scrofula, but only appeared after a sojourn in the manufactory for at least two years, and in individuals habitually exposed to the fumes of phosphorus. All the workmen affected, whom he had observed, had decayed teeth before the disease commenced, not unfrequently before commencing the manufactory. Many other workmen with sound teeth have preserved them in the midst of phosphoric vapours, a fact which induces him to believe that carious teeth constitutes a predisposing cause of the disease.

As to the idea of some German physicians that the necrosis is owing to the vapours of arsenic, which in some manufactories is mixed with those of phosphorus, he shows that the effects of arsenic have nothing in common with these here observed, and again that necrosis of the jaw-bones happens where arsenic has never been employed. He thus attributes the principal action to the vapours of phosphoric acid.

The sanitary measures proposed by M. Roussel, are 1. To carry on every operation in a separate locality, and by this means greatly diminish the number of those now exposed to these fumes, and 2. To establish a perfect system of ventilation in the workshops of those who must necessarily continue exposed.

At the meeting of the same body, on the 9th of March, M. Seddillot of Strasburg, presented observations on necrosis of the bones of the face and pulmonary diseases in workmen of this description, which had occurred under his observation. His cases are very similar to those of Dr. Strohl. Three females were admitted in succession, each having laboured about four years in the manufactory. All had necrosis of the severe and large extent as in the worst instances already related, and the third of these was in addition suffering under phthisis, of which she died. The affected parts, in those who recovered, remained solid, and covered apparently with a mucous membrane of a red colour.

But on the other hand, Bricheateau (*Journal de Medecine de M. Trousseau*, March 1846), is disposed to doubt the accuracy of the above opinions. He remarks, that Heyfelder, Professor of Clinical Surgery at Erlangen, has published a number of cases of necrosis of the maxillary bones in workmen of this class, and that they are ascribed to the phosphoric fumes, and further, that in the manufactory at Nuremberg, nine cases have occurred, and the same number in the workshops of Vienna, according to Lornser.

These facts appeared so extraordinary and alarming, that Chevalier and himself were induced to examine the manufactories of Paris, whether similar affections existed there. The result was, that among about two thousand workmen, male and female, no case of caries or necrosis is, stated by the proprietors to have been noticed.

They collected, however, the following: 1. A workman had been attacked with a disease of the jaw-bone, but no further information could be obtained concerning him. 2. A superintendent laboured under caries of the jaw-bone, but his attending physician considered it to be a syphilitic affection. 3. A female had been attacked with the same and died in one of the hospitals of Paris. 4. A female had an ulcer of the cheek, but her attending physician certified that this existed, before she entered the manufactory.

The workmen state that the vapours arising from the combustion of these matches, consists of sulphurous, phosphorous and phosphoric acids, that these produce cough among them, and this is always more severe in winter than in summer, as in the latter season, the windows being open produce a free ventilation, which it is impossible to obtain in the cold season.

Dr. Belfour, in the *Northern Journal of Medicine*, has added some interesting facts in relation to these manufactories. The dipping of pieces of wood in the phosphoric mixture and the drying of the matches, are carried on in ill ventilated rooms, from twelve to thirteen hours daily. In each establishment, from three to four pounds of phosphorus are daily employed in the production of from one to two millions of matches, the mere drying of which must give no inconsiderable quantity of phosphoric fumes, to which also must be added the quantity of metaphosphoric acid produced by the burning of sundry parcels, which, in spite of care, is not uncommon. It would seem that continued exposure to the fumes for a length of years, is requisite to produce the disease, as no cases were observed at Vienna until the manufactories had been at work upwards of eleven years. Scrofulous subjects suffer most, and in them the disease is most fatal. Almost all the girls employed have the gums more or less affected, and at their junction with the teeth, a red ulcerated line, like that produced by mercurial salivation, is apparent. When the individual is robust and the necrosis is confined to a small portion of the bone, exfoliation takes place and a gradual cure follows, but where there exists any tendency to scrofula, phthisis becomes developed, and the patient sinks under the combination.

It is mentioned in *Chambers' Journal* for July, 1846, from which this last notice is taken, that the Austrian government, in order to counteract as much as possible, this distressing malady, has ordered, the observance of the following precautions: 1. That the matches must not be permitted to be dried in the workroom, and if possible this must be done in one situated above it. 2. That every second hour, the girls be obliged to wash their mouths with acidulated water, and 3, that they be sent out twice a day to take their meals and get some fresh air. These precautions are ordained on the recommendation of a medical commission.—*American Journal of Medical Science.*

ON LEAD & ITS ACTION ON THE ANIMAL BODY

A contribution towards determining this action for the use of Physicians, Chemists, and Artists.

By FERDINAND RUMPELT, M. D.

To the physician the most interesting portion of the present treatise is that which refers to the character of the morbid effects produced by the action of lead upon the human body, the parts of the body on which the poison acts either primarily or secondarily, and the manner in which it exerts its deleterious influence. The leading conclusions of the author in relation to the pathological effects resulting from the different preparations of lead, are drawn from cases in which these were administered to cows and other animals—and notwithstanding he has compared, and apparently with much care, the phenomena which resulted from the action of the lead in these experiments, and the morbid phenomena exhibited by the human subject, when accidentally exposed to its influence, we have less confidence in the accuracy of those conclusions than we would have had, were they based throughout upon an extended and cautious series of strictly clinical and pathologico-anatomical observations. The work, nevertheless, presents a number of very interesting facts.

It is divided into twenty-nine parts. The first comprises a general account of lead as a metal, and in its several chemical combinations. In this the author advances the general proposition, that, in no form, can it be without danger introduced into the animal body, and only under certain conditions externally. In the second part is presented a view of the deleterious influence of lead upon those who are engaged in procuring its ore, as well as upon those artisans who make use of its oxides and salts—with some remarks upon the means of avoiding its poisonous action.

In the third part, the course of the disease produced by the action of the carbonate of lead is shown by the detail of seven cases, which fell under the care of the author. The general summary of the symptoms is given in a succeeding chapter.

The fourth part treats of the direct, indirect, and remote effects of the lead; compares the phenomena resulting from its action upon beasts and men; investigates the mode in which it gains admittance into the circulating fluids; and notices the primary and secondary diseases produced by it.

From this we translate the following account of the morbid phenomena resulting from the poisoning by lead which occurred in seven workmen in a white lead factory, and which phenomena were designated as those of colica pictorum.

“As in all other diseases, the lead colic is destitute of premonitory symptoms; the very first symptoms which present themselves being the commencement of the pathogenetic reaction. Hence, the first indications of disease are a sense of languor and lassitude with a disinclination to rise from bed. The digestion is disturbed; the taste is diminished: sweetish—astrigent—or abnormal and bitter. The taste for food becomes entirely lost, and all food is alike disgusting. There is intense thirst. The patient becomes disgusted with everything; is agitated at intervals; commences to gag, without discharging anything from the stomach. The bowels become costive, and no evacuation occurs for many days, and is only obtained by the use of purgatives, when the feces are discharged in the form of hard balls. The discharges, are, however, sometimes of a pulpy or fluid consistence. As soon as the purgatives are suspended costiveness again recurs. At first the patient passes but little urine, not more than a tablespoonful at a time, which is of a straw color and only passed with much straining and pressure upon the bladder—subsequently scarcely any urine is discharged, and finally none. The face is pale, as if dusted over with flour. The countenance becomes, as it were, broken up, distressed, and of a grayish-yellow color. There is a sense of oppression, heaviness, and numbness of the

head, with pain and vertigo. A sense of weight and burning in the stomach or umbilicus; then a painful tension extending from the stomach to the scrotum; and in the rectum, bladder, and back, a dragging pain. The stomach is drawn inwards, and the whole abdomen flattened. The patient is unable to lay still for any time, but throws himself about upon the bed. The distressing sense of uneasiness extending throughout the body renders sitting and lying equally painful. In consequence of the pain he is unable to lie upon the back or either side. The pulse is either weak or somewhat firm, full or small. It is either slow, oppressed, or jerking. It is synchronous with the motions of the heart. The respiration is deep. During the paroxysms of pain it is somewhat increased. The parietes of the chest cease to act. The patient affected with chilliness, often running into a complete rigor. His eyes have a staring expression. The gums have a morbid dead-like appearance, and their edges are of a livid or whitish-blue color. The legs and hands tremble, and the knees in walking give way. The chills begin to alternate with increased heat; with this commences the second stadium of the disease.

“As the pain increases or diminishes, and as the organs of the abdomen or chest become affected, the pulse increases in frequency; in a single day rising from 65 to 100, from 100 to 120, or even to 126 strokes—it is, at the same time, either hard—hard and full—or soft and small. The breathing becomes short, quick and superficial—often impeded by pain of the chest, and the patient experiences a distressing sense of oppression.

“The patient discharges a portion of mucus without cough. A tetanic contraction of the extremities comes on—a pain extends down the arms to the hand, and causes the limb to be kept extended, unless when the hand is spasmodically directed towards the epigastrium, and the fingers bent. Severe pains extend from the stomach over the left ribs towards the back, shoulder-blade and breast. At the same time a burning pain extends from the spine into the rectum, causing frequent ineffectual efforts at stool, and into the testicles. The severe pains of the extremities cause them to become contracted and distorted. The pains of the thighs are often so great as to cause the patient to scream out. The parietes of the abdomen at the hypogastrium lie upon the spine—they are rather contracted and tense than drawn inwards. The bowels continue obstinately costive and sometimes for fourteen days no urine is passed, or only in a very small quantity at a time. The pain in the back, rectum and testicles, destroys the patient's strength and renders him unable to move. There is a rigidity extending from the forearm over the whole body. The eyes are open and fixed; the pupils do not contract. The pain extends towards the eyes, the motions of which cause a stinging sensation.

“The third stadium is properly only the remote effects of the poison. The pulse is now scarcely to be counted; it is tremulous, irregular and intermitting. The head is oppressed, with a tendency to determination of blood to its vessels. There is pain at the top of the head, and the brain feels as if compressed. The pain is sometimes so severe as to cause the patient to scream out. The patient becomes speechless; by the motions of his head he gives intimation that he hears and understands the questions put to him, but finally loses the power to do this. There is a distressing sense of restlessness throughout the whole body—so that the patient can neither sit nor lie, and when he attempts to stand his knees sink under him. He feels a painful sense of oppression behind the sternum and in the left breast.

“If the disease does not terminate in palsy, and the remedies employed during the second and third stadia have their desired effects, the bowels become relaxed, the stools of a more natural appearance; the pain in the abdomen disappears, and the functions of the digestive organs begin to assume their normal activity. The skin becomes moist,

and the urine is regularly discharged. The sense of oppression at the chest disappears: the pains diminish in intensity and the breathing becomes free and regular. The oppression of the head and the vertigo cease; the intellect becomes clearer, and the countenance assumes a more sprightly expression. The nights are more quiet, and the patient sleeps more naturally. The digestion becomes regular. The feeling of every part of the body becomes improved, and the strength gradually increases. The complexion, however, continues, for some time pale, and the livid, the deadened gums remain separated for a length of time from the teeth.”

This section concludes with some remarks on the different groups of symptoms which result from the poisonous effects of the different preparations of lead according as they are introduced into the lungs, or stomach, or are applied upon the skin. Colic, it is very generally admitted, is one of the most common forms of disease resulting from the lead in whatever manner introduced: and accordingly as the lead affects the motor nerves, the lungs, or the brain, succeeding or superadded to the enteralgic symptoms, there occur anthralgia, diminished action and rigor of the muscles the extremities ending in paralysis, diminished action of the heart, encephalopatia and various nervous symptoms, disturbed respiration, oppression of the chest, &c.

In the ensuing chapter the author presents more fully his views of the mode in which the lead, when introduced into the system, produces its deleterious effects. When acetate of lead is introduced in large or repeated small doses into the alimentary canal, he describes it as first uniting with and changing the properties of the mucus contained in that cavity, while, at the same time, it excites gradually an irritation of the mucous membrane, indicated by increased thirst and loss of appetite—which becomes more or less intense, according as the acetate of lead is more or less changed by its combination with the mucus. A portion of the lead also enters into the orifices of the veins of the stomach and intestines, and thus mixing with the blood changes the properties of the latter—producing small dark coagula: The irritation produced by the action of the poison upon the stomach being conveyed through the nerves to the spinal cord, is thence reflected upon the other nerves of sensation as upon those of motion. The disturbance of the respiratory function, the author believes, to be in part owing also to the direct action upon the pulmonary blood-vessels and their nerves of the lead conveyed to them through the blood. The irritation of the stomach is, in time, extended to the brain, and thence reflected upon the different cerebral nerves; but the brain may also be immediately affected by the lead contained in the blood circulating through its vessels.

It is not necessary to follow the author in his exposition of the views thus briefly announced, and his application of them to explain the nature and succession of the symptoms produced by the action of lead on the animal body.

To show the action of the lead (white lead) upon the coats of the stomach and bowels, the morbid appearances presented by the different organs in animals destroyed by the acetate of lead, are compared with the pathological condition of the same organs in the human subject after death from the effects of lead, as given by Tanquerel.

RUMPELT.

“1. The upper layer and epithelium of the stomach formed a slimy, 1.2 lines thick, homogeneous mass.

“2. A thick, glutinous, rosy, semi-transparent mucus, took the place of the epithelium of the stomach.

TANQUEREL.

“1. The mucous membrane of the alimentary canal, from one foot below the stomach to the rectum, was covered with a thick, glutinous, yellow mucus, which was with difficulty scraped off with the knife.

“2. A thick coagulated mucus covered the mucous membrane of the intestines.

"3. The mucous membrane of the stomach was at different parts changed to a whitish appearance, dry and friable.

"4. Through these whitened spots, the vessels, distended with blood, of the inner coat of the stomach could be distinctly perceived, as red lines.

"5. The entire length of the small intestines were in parts decidedly reddened.

"6. There occurred numerous small ecchymoses on the whitened portions of the mucous membrane of the small intestines."

In the same manner the author exhibits the effects of lead upon the brain.

RUMPELT.

"In a portion of brain of a young man examined after forty-eight hours.

"1. The gray and white substances were not to be readily distinguished from each other, both being of a greyish-white appearance.

"2. By a slight traction some portions were easily separated, which presented an evident fibrous appearance.

"3. In the brain of an adult forty-eight hours after death, both substances were easily distinguished from each other, notwithstanding the gray had assumed an appearance similar to the white.

"4. The substance of the brain was of a dense consistence and was easily broken.

"5. The pia mater was thickened and easily separated from the brain."

"A portion of the spinal cord of adults examined twenty-four and forty-eight hours after death presented the following appearances.

"The pia mater very much contracted and thicker than in its normal state, so that the cut end of the medulla spinalis projected considerably beyond the

"3. The small and large intestines were somewhat contracted, and covered with a thick adherent layer of a glutinous matter. They could be readily distended by inflating them with air, but tore upon the slightest handling.

"4. Brown lines indicated the course of the gastric vessels.

"5. The stomach and small intestines were slightly reddened—and the rest of the canal in parts of a rose red, and, as it were, injected.

"6. Ecchymoses and blackish stripes appeared upon the mucous membrane of the small intestines."

TANQUEREL.

"Tanquerel describes the following as the pathological appearance presented by a number of brains.

"1. *a.* The substance of the brain was externally of a dirty yellow, and internally of a grayish color, and the grey substance of an ash-gray yellow. *b.* The substance of the brain was of a dirty yellow.

"2. Dr. Glück notices a number of canals through many parts of the white substance of the brain in a person destroyed by the effects of lead, as a morbid appearance.

"3. *a.* The substance of the brain was of a yellowish color. *b.* The white substance was of dirty yellow, ash-gray, and dull, and almost transparent; the gray substance, instead of a rose red, appeared of a yellowish-green.

"4. *a.* The parenchyma of the brain was hard. *b.* It was as readily broken as the substance of the liver. *c.* The convolutions of the brain were flattened so that the depressions between them had disappeared. *d.* The texture of the brain was hardened.

"5. *a.* The meninges were dry. *b. ibid.* *c.* The meninges in a patient who had died of encephalopathy from the poison of lead were dry. *d.* The meninges with their destined blood-vessels were dry."

Tanquerel notices a softening of the substance of the cord; an injected and yellowish appearance of the cerebellum and medulla oblongata; a softening of the medulla lumbaris; a number of coagula of blood in the dura mater spinalis; from 3.4 ounces of fluid in the spinal canal, the veins being at the same time

divided edge of the former, in the form of a button, in which the fibres of the cord were very readily detected."

A portion of the *ischiatric nerve* three inches long, presented, twenty-four or forty-eight hours after death, the following appearances.

"The sheath of the nerve was thickened and contracted, so that the contained nerves, with their neurilemma, separated from each other, projected beyond the divided end of the sheath in the form of a button, and of a firm consistence, opaque and of a yellowish-white color. The nervous sheath was at its edges somewhat transparent, and appeared of a dead grayish-white color. The individual nervous filaments appeared separated, and distinct from each other."

In the tenth part the author treats of the entrance of the oxide of lead into the blood. while he admits that the presence of lead in the blood has not been detected by chemical analysis, the fact, he believes, may be established by the change in the physical appearance of the blood, and in its physiological relations.

In the thirteenth part, the author presents the results of experiment made to test the presence of lead in the blood of different portions of a rabbit, destroyed by the administration of acetate of lead.

A portion of the lungs being subjected to the action of a solution of sulphuretted hydrogen, became immediately of a brown colour, and after twelve hours a slight dark-colored precipitate was thrown down. Sulphuric acid, added to the blood from the heart, caused an almost imperceptible cloudiness.

Blood from the thoracic aorta and vena cava, subjected to the action of sulphuretted hydrogen, became of a brown color, and after some time a slight precipitate took place;—subjected to the action of sulphuric acid, after a long time it became slightly cloudy.

The small intestine, from which the yellowish mucous coating was removed, being submitted to the action of sulphuretted hydrogen, there occurred, after twelve hours, a little blackish precipitate, but under the action of sulphuric acid presented no perceptible change.

When the duodenum, after removal of the coating of mucous, was subjected to the action of sulphuretted hydrogen and sulphuric acid, the same results occurred. The kidney gave under the action of sulphuretted hydrogen a black precipitate, and under the action of sulphuric acid, a slight precipitate. Results were obtained when the brain was submitted to the same reagents, similar to those obtained from the heart: No traces of lead could be detected in the medulla spinalis.

In the remaining portions of the work, the author explains the pathology of the several forms of disease produced by the poisonous effects of lead, by an application of the general proposition which he has attempted to establish; namely, that the lead produces a direct irritation upon the tissues with which it comes first in contact—which irritation is extended through the nerves, the spinal marrow and brain, to neighbouring and remote organs; the lead also causes, by

gorged with blood. The pia mater decidedly reddened by over-distended ramifications of its blood-vessels, and the substance of the medulla spinalis presenting numerous red points. Other accurate observers notice dryness of the membranes of the cord and increased density of its substance.

Tanquerel notices the following as the morbid appearances observed by him in the nerves.

"The substance of the nerves in a patient who died amaurotic and comatose, was firm.

"The ganglions in a patient who had suffered from encephalopathy had a grayish-yellow appearance."

its entrance into the blood and the changes it occasions in it, an irritation in the deep seated organs, to which it is carried in the course of the circulation, so as to come immediately in contact with their tissues. The whole of the morbid phenomena produced by the poison of lead, are referred to a subacute inflammation of the vascular and nervous systems.

Thus, in what the author terms the five forms of the lead disease, we have

1st. Symptoms referable to the abdominal cavity, commencing with colicky pains, (*colica saturnina*,) and terminating with all the symptoms of enteric inflammation.

2d. Symptoms referable to the thoracic cavity—oppression and tightness with shortness of breathing, and symptoms similar to those of pneumonia and carditis.

3d. Symptoms referable to the cranial cavity—as severe pain and oppression, and other symptoms indicative of an inflammatory disturbance of the brain.

4th. Symptoms of painful irritation or inflammation of the medulla spinalis—giving rise to tonic and clonic spasms of the muscles, terminating in anæsthesia or paralysis.

5th. In the subcutaneous cellular membrane, and in the synovial membranes, more particularly of the lower extremities—violent anthralgia, with swelling of the joints, and other symptoms of inflammation.

The treatise of Dr. Rumpelt is, upon the whole, calculated to improve our knowledge of the pathology of the diseased condition produced by the action of lead upon the animal body. Some of the positions assumed by the author appear to us to want a more extended series of observations to support them—while his pathological reasoning does not strike us as being always very accurate. Many of the data from which the author's conclusions are drawn are derived from the effects, direct and remote, which resulted when large or repeated doses of one or other of the salts of lead were given to animals—now, whether the pathological effects of these salts, when thus administered, are identical with those caused by the lead introduced gradually into the system—as in the case of the various workmen who are brought daily in contact with one or other of its preparations—is a question which may admit of some doubt. It is true that the author has endeavoured to remove this doubt by comparing the symptoms during life, and the state of the organs after death as presented in animals poisoned by lead, and in patients laboring under disease produced by exposure to its influence: still there is a very great difficulty in making the comparison so as not to be led into error.

—*American Journal of Medical Science.*

SULPHURIC ACID IN APHTHÆ.

Prof. Lippich, of Padua, employs, with success, the sulphuric acid against aphthæ, and in syphilitic mercurial stomatitis, when the mucous membrane of the mouth and lips are covered with ulcerations which render deglutition difficult. He uses the following formula:—R. White honey, 30 grammes; sulphuric acid, 2 grammes. Mix, and make a liniment. In grave cases the proportion of the sulphuric acid may be increased to eight grammes to the same quantity of honey. The ulcerated surfaces are to be frequently touched slightly with this liniment by means of a soft pencil.—*Gazette Medicale.*

ON THE EFFECTS OF EMETICS ON YOUNG SUBJECTS.

By JOHN B. BECK, M.D.

Dr. Beck remarks that children vomit with greater facility than adults; this he ascribes to the more conical shape of the stomach in children, in consequence of which the contents are more readily forced out. Active and debilitating emetics, the author adds, are often injurious; he alludes especially to the antimonial emetics. In the first place, tartar emetic is a powerful *sedative*, and children do not bear

well this class of agents. The following are the author's conclusions:—

1. As a general rule we need not be afraid of vomiting the youngest child, provided the means used are mild—such as ipecacuanha, &c. The mere act of vomiting is attended with no danger, while the remedial agency of an emetic is one of great power and value. Besides acting on the stomach, it extends its influence to the mucous membrane lining the pulmonary organs, promoting secretion in the first place, and then aiding in dislodging and ejecting morbid accumulations; accordingly, in pulmonary affections, there is nothing so efficacious.

2. The vomiting induced by the preparations of antimony ought to be resorted to with great caution in very young children, and should never be used except in those cases where a sedative effect is required, and can be borne with safety. Inflammatory excitement ought then always to be present to justify its use in a young child. Where the object is simply to evacuate the stomach, it ought never to be thought of. In such cases as croup and pneumonic inflammation, it may be justifiably and beneficially used. In these cases it will be found, that the system can bear the sedative influence of the article much better than it can in the ordinary conditions of the system. Even here, however, care should be taken not to push the article too far, as dangerous collapse has been known sometimes to be the result.

3. The continued use of Tartar Emetic in young subjects cannot be too specially guarded against. It is in this way, probably, that it is so apt to prove injurious. A single dose, even though it vomits very freely, may be borne with comparative impunity, while the repetition of it may keep up nausea and intestinal irritation, so as to cause injurious prostration. This is very likely to happen in cases of a chronic character, like hooping-cough. Although mild emetics are among our best remedies in this disease, and where the subject is old enough, a single emetic of antimony is frequently exceedingly beneficial, yet the repeated use of antimonial emetics, as is too often the case, appears to me to be a great error in practice. It is not indicated by the nature of the symptoms, and violates a great rule which ought always to be observed in the management of chronic cases, and that is, not to break down unnecessarily the strength of the patient. Again, in ordinary catarrhal affections in children, a good deal of mischief is frequently done by the continued use of expectorant mixtures containing this active article. The Hive Syrup of Dr. Coxé, which is now in every family, and is given on the slightest occasions to infants, without even consulting a physician, has, I am convinced, done a great deal of harm. I say this without wishing to undervalue this preparation. In proper cases it is really a useful article, but persons out of the profession ought to know that its principal efficacy is owing to the quantity of Tartar Emetic which it contains, and that the indiscriminate use of it in cases where mild articles are required, must be injurious.†

4. As the effect of Tartaric Emetic on the system cannot always be measured by its emetic operation, even in the adult, this fact ought to serve as a caution against the too common practice of giving repeated doses of it to produce vomiting in children, when they happen to be narcotized. While it fails to vomit, it may still operate as a poison to the

* Dr. Armstrong says that "it is a most notorious fact, that the hooping-cough is far more fatal in London than in the country; and I believe," he adds, "that this arises from the very free use of antimonial wine in London." Lectures, p. 248.

† Every ounce of Coxé's Hive Syrup contains one grain of Tartar Emetic. My friend Dr. M'Creedy has communicated to me the particulars of a case in which a child between four and five years of age, labouring under hooping-cough, manifestly sunk under the too frequent use of this article. The exhibition of it had been continued about eight days, when symptoms of intestinal irritation came on, accompanied with great general prostration, which in a few days ended the child's existence.

system. In all cases of this kind, the proper method of treatment is, not to push the emetic, but to endeavour to restore the sensibility of the patient, and then sometimes vomiting comes on at once.

5. In using Tartar Emetic in children, especial regard should be had to their constitutions. In those naturally delicate, and especially where the scrofulous diathesis exists, it should never be used if it can be avoided. Prostration is much more apt to ensue in them, and where the article is persisted in for any length of time, is sure to do harm. It is in such constitutions, when labouring under hooping-cough, and where the use of this article has been too long continued, that the baneful effects of it are most strikingly observed.

6. It is perhaps hardly necessary to say that if Tartar Emetic be an article of such danger, the younger the subject to whom it is given, the more likely is it to do harm. In children under a year, I should say, as a general rule, it ought never to be used. During that period, the powers of life are too feeble to bear so active a remedy, at the same time that all the beneficial effects of an emetic may be gained from the use of ipecacuanha, or even milder means.—*N. Y. Jour. Med.*, Sept. 1846.

TREATMENT OF SEMINAL LOSSES BY COMPRESSION.

M. Breschet recommends compression, in seminal losses, applied to the prostate gland, behind the perineum. For this purpose, a belt of leather was passed round the waist, and another descending over the perineum; a moveable compress was attached to the perineal strap, by which suitable compression could be made. The beneficial influence of this treatment is attributed to keeping the semen in its reservoirs, by which they become accustomed to the stimulus; and also to the modifying effects of pressure.—*Western Lancet*.

MIDWIFERY.

ON INCISION OF THE NECK OF THE UTERUS IN CASES WHERE, FROM THE CONTRACTION OF THE ORGAN, DELIVERY IS DIFFICULT.

By Dr. LABORIE.

The author commences his paper by stating, that whilst in many cases the progress of labour appears to proceed naturally, the membranes having ruptured, and the pains succeeding each other regularly, yet the os uteri does not dilate, and labour is indefinitely retarded. The woman being otherwise well formed, it is evident the obstacle to delivery is to be sought for in the cervix, which being rigid, does not yield to the contractions of the body of the uterus itself. In general, simple means, such as bleeding, baths, emollient and narcotic injections, are found sufficient to overcome this state of rigidity. But in a certain number of cases these means are insufficient, the labour is lingering, and the life both of mother and child is in danger. It is in such cases that incision of the neck must be had recourse to, in order to induce dilatation, and this has now been so often performed, as to rank as a legitimate operation.

Three cases occurring in the practice of M. Dubois are detailed by M. Laborie; to one of these we invite the attention of our readers, as the operation was followed by a result not usually met with.

A young well-formed girl was admitted into the Clinical Hospital in the month of June, 1844. She had suffered from hemorrhage at various times during the course of her pregnancy. On the 6th the pains of labour commenced; and continued during the whole day. In the evening, the membranes burst, the neck was thick and rigid, and the os uteri dilated to the extent of two centimetres.

On the morning of the 7th, a face presentation was recognized. The cervix was still rigid, but dilatation had advanced to the extent of three centimetres. Although the woman was much weakened, M. Dubois still deemed it prudent to allow things to

take their course without interference. At half-past one, labour having made no advance, and the patient being much exhausted, incision of the cervix was then determined on. One incision made in the right side produced slight relaxation, but was followed by no other consequence worthy of remark. A second was immediately practised on the left side, but scarcely had it been done, when there ensued a copious hemorrhage of bright red blood. M. Dubois had immediate recourse to the forceps, but could not apply them owing to the rigid state of the cervix; he was equally unsuccessful with the lever. Injections of cold water were then had recourse to, but without effect in stopping the hemorrhage. The woman was now so exhausted that it was necessary to plug the vagina. The bleeding was thus stopped, but the patient continued in a state of extreme distress, and delirium supervened. Nevertheless the plug was removed in the course of half an hour; dilatation had now become sufficient, and labour was terminated by the forceps. All the unfavourable symptoms ceased, and the woman soon recovered.

M. L. remarks that cases of this kind are of rare occurrence, so much so, that M. Dubois had never met with one similar. He conceives that it must have been owing to the placenta being inserted near the mouth of the uterus.

The following rules laid down by M. L. as to the mode of operating are so important, that we give them *verbatim*:—"We have seen," he says, "M. Dubois have recourse sometimes to the scissors, in order to relieve the strictures at the mouth of the uterus. M. Danyau, on the other hand, invariably uses the scissors. Should a preference be given to one or other of these instruments, or may they be used indifferently?"

"No decided answer can be given to the question, for either of them may be had recourse to according to circumstances, and according to the spot at which it is necessary to relieve the stricture. As a general rule, however, we should not hesitate to employ the bistoury, provided the cervix be not displaced; and we should choose that form of bistoury employed in removing the amygdalæ. When it is wished to practise an incision, either to the left, or anteriorly, or posteriorly, the index finger of the left hand must be introduced into the vagina, and its palmar surface applied to the spot where it is desired the incision should be made. The bistoury must then be introduced by means of the right hand, its flat surface sliding along the surface of the index of the left, until its point, passing within the cervix, comes to be in contact with the end of the finger. By means of a semicircular motion, the cutting edge of the instrument must then be directed perpendicularly towards the free edge of the orifice; should the latter be tense, the incision will be most readily executed, by giving to the instrument a sawing motion. We recommend all surgeons to limit the incision to the extent of a centimetre, conceiving it preferable to multiply them, should the desired result not be produced. If the incision be made to the right, the right hand must be used as the guide to the instrument.

"When the cervix lies far back, it is impossible to use the bistoury for the purpose of relieving its posterior lips; in such a case, recourse must be had to the scissors. The mode of operation is nearly the same; but in order to insure that the incision does not go beyond the extent of a centimetre, a most careful examination must be made by means of the finger. The scissors are also applicable in cases of retroversion, when the anterior lip has to be relieved, as well as for lateral incisions, in those cases in which the cervix lies very much to the right or left. It will be readily conceived, that in all such displacements, the most elevated edge of the orifice would be reached with difficulty by the bistoury, as its point would be in danger of coming in contact with the walls of the uterus, and wounding them. If the use of the scissors be entirely prohibited, a bistoury with a very convex cutting edge, must be made use of.

"The operator can, in general, immediately ascertain the effects of his incision; the cervix, from being hard and resisting, becomes more pliable. The influence of the operation should be particularly watched during a pain; it will then be found, that the head of the child, pressing strongly on the orifice, advances more perceptibly than before. The dilatation, in a quarter of an hour after the operation, is generally sufficient to permit of the application of the forceps, should it be thought desirable to terminate the labour in that way. But should this not be the case, new incisions must be had recourse to. M. Dubois affirms, that he has never failed in accomplishing his end by following these precepts.

"There is one counter-indication to the operation, which we wish particularly to specify, and that is, thickening of the cervix.

When the latter has not become thin, the operation, instead of being of advantage, may be the very reverse. In this latter case, hemorrhage is most to be feared; but the incision over such an extended surface may also be the primary cause of laceration so extensive as to prove fatal.

"Attachment of the placenta, near the cervix, may, from what we have previously stated, be also held as a circumstance sufficiently serious to forbid the operation."—*Monthly Journ. Med. Sci.*, June, 1846.

INFLUENCE OF THE QUALITY OF THE MILK OF THE NURSE ON THE HEALTH OF THE CHILD.

In our number for January last, p. 215, we gave an account of some interesting researches by M. Donné on this subject. The following cases related by M. Girard in the *Journal de Pharmacie* (Oct. 1845), are confirmatory of the conclusions of M. D. :—

A young lady, fifteen days after her delivery, found it necessary to procure a nurse for her child, and she succeeded in getting one whose milk was only fifteen days older than her own, and which presented all the physical characters of good milk. The nurse was besides young and in apparently good health. After a few days the child began to sleep ill; it was attacked with a troublesome diarrhæa, and sensibly fell off; shortly after this it rejected all its food, and the mouth got foul with aphthæ. As the ordinary medical treatment failed to relieve the child, the nurse's milk was examined, and was found to present the following characters:—The milk was neuter, of an ordinary consistence, and became slightly viscous by ammonia. The globules were very voluminous, and instead of appearing under the microscope of a brilliant pearly lustre, were of a dull white opal colour. The whole field of the microscope was scattered with rounded particles, of which the form was comparable to that of a flattened raspberry, and presented the characters usually assigned to the corpuscles of colostrum. A new nurse was, therefore, instantly procured, whose milk presented the microscopic properties of healthy milk. Within forty hours after the child had sucked this nurse the vomiting and diarrhæa had ceased, the aphthæ were greatly diminished, and a few days sufficed to restore the child to strength.

In another case where the mother was the nurse, the child, two months old, suffered from constant vomiting, was falling off, and had occasional comatose attacks. The milk of the mother, when examined by the microscope, was found to contain a considerable quantity of mucus. After a while the child vomited less, and the milk being anew examined, was found to contain fewer mucous globules. Soon, however, the vomitings and other disagreeable symptoms became worse, and to save the child it was absolutely necessary to change the nurse. Eight nurses were examined, but the milk of seven was rejected on account of containing globules of mucus, or granular bodies, or from having undergone some other change. The eighth nurse having apparently healthy milk, was chosen, and within two days the vomiting and other symptoms had disappeared, and did not again return.—*American Journal of Medical Science.*

AGE AT THE COMMENCEMENT OF MENSTRUATION.

(*Birmingham Lying-in Hospital.*)

Of 623 females, in one, the catamenia occurred at nine years of age; 2 menstruated at ten; 15 at eleven; 46 at twelve; 87 at thirteen; 130 at fourteen; 115 at fifteen; 105 at sixteen; 67 at seventeen; 43 at eighteen; 10 at nineteen; and 2 at twenty.—*Western Lancet.*

INTERVAL BETWEEN MENSTRUATION AND CONFINEMENT.

(*Birmingham Lying-in Hospital.*)

In 11 cases there was an interval of six months; in 6 of

seven months; in 42 of eight months; in 110 of nine months; in 70 of ten months; in 2 of eleven months; and in 3 of twelve months. Ten patients had not menstruated since their previous confinement; three menstruated up to the period of quickening; and two menstruated during their entire pregnancy. (?)—*Ibid.*

MIDWIFERY STATISTICS.

(*London Lancet*, August, 1846, p. 191.)—A reviewer in the March number of the *Archives Generales*, gives the following general results of midwifery statistical tables, recently published in the Italian and English Journals. In 47,116 labours, twins occurred 446 times (9.410 per thousand) and triplets four times (1 in 10,000). There were 40,233 head presentations, (969 per thousand) of which 40,046 were vertex, and 187 face. There were 1,065 breech or footling presentations, (27 per thousand) and 154 transverse ones (4 per thousand)—of these labours 46,632 terminate naturally (969 per thousand) and 484 (11 per thousand) artificially, viz.:—221 by means of forceps; 89 by craniotomy; 54 by turning, and 20 by vaginal or uterine hysteriotomy.—*Southern Journal of Medicine and Pharmacy*, Nov. 1846.

SURGERY.

ON THE NON-MERCURIAL TREATMENT OF SYPHILIS.

By Dr. SCOTT.

Proceedings of the Medico-Chirurgical Society, Edinburgh.

Dr. Scott made some observations on the importance which attaches to the history of Syphilis. No subject could be more full of interest, or prove more clearly the necessity of strict investigation into what are considered the most established doctrines in medicine. Thirty years since there was no doctrine in the profession which was considered to be so well founded as the treatment of syphilis by mercury. In England none presume to differ from the opinion of John Hunter, that the disease was incurable without mercury, and not only that the medicine was required to remove the disease itself, but that to cure the disposition to it, and to secure the constitution from its ravages, an extended course of mercury was required. Sir Benjamin Brodie still retains this opinion; and Dr. S. observed that he would not have probably called the attention of the Society to this subject, had he not observed, in the lately published Essays by Sir Benjamin, some remarks, which, from so high an authority, appeared calculated to lead to what appeared to him an injurious line of practice. Every now and then a dissenting voice had been raised against the mercurial doctrine, but the profession in general adhered to the opinion of John Hunter.

Heberden considered it as one of the four specifics discovered in medicine. Allusion was made to the remarkable paper of Dr. Fergusson in the *Med. Chir. Trans.* of 1813, and the observations made by him on the disease, as it appeared in Portugal; and the opinion of the German physicians.

Sir Benjamin Brodie, in mentioning the work of Mr. Abernethy on Pseudo-Syphilis, considers that the illogical conclusions and extraordinary assumptions contained in it have much diminished the value of this part of his writings. This work of Mr. Abernethy, Dr. S. considered a most useful one, as having led the way to the investigation from which such important results have been derived. Dr. S. then related his personal experience. In 1813 he was placed for a short time in Colombo, in charge of the venereal wards, in which the cases were all treated with mercury. Many of them he found were well in a few days, others in five or six, others in three weeks, periods too short to warrant the conclusion that they were venereal; they were therefore set down as cases of pseudo-syphilis. The number of these cases increased

with the field of experience, and in a few years the use of mercury was gradually resigned in almost every case of local disease. The secondary symptoms were few and slight, and never required an extended course of mercury. The same plan of treatment was also adopted with them, and in a few years Dr. Scott, then garrison surgeon at Point de Galle, entirely abandoned the use of mercury. The inference which he drew, however, was, not that the venereal disease was curable without mercury, but that the real disease did not exist in Ceylon. Dr. S. then described the miserable victims who were constantly found in military hospitals at that time, affected by extensive ulcerations, nodes, &c., who furnished a considerable number of the invalided and many deaths. Since mercury was abandoned, such cases have disappeared from the hospitals. In 1818 and 1819, Dr. Scott became acquainted with the results of the investigation which had been carried on in England, and since that time had entirely abandoned the use of mercury as a specific. He had found many cases in which it was required as an alterative. After some remarks on laryngeal ulceration, diseases of the bones, &c., which are still met with in practice, Dr. S. stated that he considered every case of local disease to be curable without mercury, and that under such treatment the secondary symptoms, when they did occur, were slightly and easily managed. In fact, the disease ran a certain course, modified by peculiarities of constitution, and required only the treatment adapted to such modifications. Dr. S. drew a contrast between two cases of secondary symptoms which had been under his care at the same time, of young men of the same age, and of irritable and unhealthy constitutions. Both were severe cases, but in one the patient recovered in two months, while the other, after many narrow escapes, could only be pronounced cured after the lapse of a year from the first attack.

Dr. Maclagan expressed his satisfaction that Dr. Scott coincided in the views Dr. M. had long entertained on this subject. His confidence in mercury as a specific in syphilis had been first shaken when, after he was a graduate in medicine, he attended for some months the Lock Hospital in London, under Mr. John Pearson. There, every variety of form in the disease presented itself, but in very many cases seemed to be aggravated, rather than benefited, by the mercurial treatment; and though Mr. Pearson, in his lectures, and in his conversations with his more advanced pupils, still advocated the necessity for mercury in the cure of syphilis, he often expressed his doubts whether in many constitutions the use of mercury had not been more injurious than beneficial. While afterwards serving with the army in the Peninsula, and in charge of a Portuguese brigade, he had also been much struck with the apparent success which attended the treatment of the primary forms of the disease in the Portuguese soldier, by topical remedies alone, or merely with the additional use of Lisbon diet and drinks, and sometimes without either. He saw none of those cases of secondary symptoms in an aggravated form, to which his late lamented friend, Dr. William Fergusson, has alluded in his paper in the Transactions of the Medico-Chirurgical Society of London, but Dr. M. was then disposed to attribute the success of the non-mercurial treatment among the Portuguese to some peculiarity in the climate, and in the constitution and habits of the natives, which he afterwards had occasions to remark in a very different disease, Traumatic Tetanus, which, with few exceptions, assumed a less fatal form among the Portuguese wounded than among the British. On his return to Edinburgh, after the peace, Dr. M.'s attention had again been directed to the subject by the opinions long expressed by his early teacher Professor Thomson, and by the opportunities of seeing the practice in the Depot Hospital in Edinburgh Castle, under Dr. Thomson's charge, as well as in that, and in Regiment Hospitals, under Dr. Hennen, Mr. Johnston, and Dr. Bartlett of the 88th regiment, the latter of whom

published an excellent Thesis at his graduation on the non-mercurial treatment. This treatment had also been adopted in the practice of Staff-Surgeon Guthrie, and in that of Mr. Rose of the Coldstream Guards, and since very generally and successfully throughout the army. Since 1818 Dr. M., with a few exceptions where the patients' scruples afford full explanation, demanding its modified use, has adhered to the non-mercurial plan of treatment both in dispensary and in private treatment, and in no one instance has had reason to regret it. Many who were then so treated are his patients still, fathers of families enjoying, as well as their offspring, excellent health, and without the occurrence in the period that has elapsed of any secondary symptoms of an aggravated form. On the other hand, he has seen too many cases where the use of mercury to its full extent has been productive of constitutional injury of the most serious character.

Dr. D. Maclagan alluded to the success which attended the practice of Dr. Fricke in Hamburg, and Professor Krukenberg in Halle, in corroboration of the benefits of the non-mercurial system of treatment.

Dr. Bennett stated, that the last account of Dr. Fricke's practice, with which he was acquainted, is to be found in Sir Alexander Crichton's Commentaries on Medicine. This treatment had been tried on a large scale in the various garrisons of France, Germany, and Sweden, and reports had been given to the various governments, amounting altogether to upwards of 80,000 cases, the general results of which were quite in accordance with the experience of Dr. Scott. He thought that one of the best evidences of the non-mercurial treatment existed in the fact, that those dreadful secondary and tertiary cases which were formerly so common, are now seldom met with, and that pathological specimens of syphilitic bones, although common in museums, are at present scarcely to be obtained.

Dr. R. Mackenzie was of opinion that the observations which had been made were directed rather against the abuse than the use of mercury. As surgeon to the Lock Hospital of Edinburgh, he had seen many cases where the sores, however obstinate, had at once improved in character as soon as the constitution was affected with the drug. He alluded to two cases especially, in which this was observed, where mercury was given for iritis, but in which obstinate chancres on the genitals also began to heal as soon as the medicine produced its physiological effects.

Dr. A. D. Campbell stated that mercury was also necessary in the syphilitic eruptions of children.—*Med. Chir. Review.*

CASE OF WOUND OF THE HEART.

By G. W. RICHARDS, M.D., Prof. of Theory and Practice, Indiana Medical College.

S. S., of Camillus, N. Y., aged 7 years, received a wound between the 7th and 8th ribs, at or near the sternal extremities, by a thrust from a narrow but long-bladed penknife. A jet of blood followed the withdrawal of the knife, which was instantly stopped by the finger of the mother. Syncope instantly followed, but he soon rallied. I saw him ten minutes after the accident. His pulse was feeble; he was pale, and bathed in a cold sweat. He was rational; his breathing free, without any irregularity of pulse. The syncope was repeated on the same day, and the day following, without any aggravation of the symptoms. From this time he became better, and resumed his school, was playful, and finally manifested his usual state of health. Three weeks and four days from the accident, he was taken with a sudden and fatal syncope.

Autopsy twenty-four hours after Death.—Wound through the integuments healed. Some extravasation through the superficial fascia. A cicatrix of the size and form of the knife-blade was found on the pericardium, which contained eleven ounces of blood, the serum of which was separated

from the fibrin and coloring matter as perfectly as could have taken place in a bowl. There was an opening in the anterior coronary artery. When was this blood discharged? Was it gradual, or was it sudden? Was it all discharged at the period of the first syncope, or was the shock from the wound upon the system sufficient to produce such syncope? Or was the fatal syncope from hemorrhage produced from sloughing of the artery at the moment of death? Or was the hemorrhage gradual?

My own opinion is, that the wound produced syncope independent of hemorrhage; that this was trifling, if any, at first. The subsequent fits of syncope were the result of the wound on the nerves of the heart. And finally, that the fatal hemorrhage was sudden and instantaneous. The patient would have recovered perfectly if sloughing of the coronary artery had not taken place. Such cases do recover, in all probability. We hear of cases where buffaloes have been killed, and rifle or musket balls found lodged in the substance of the heart; having entered a long time previous to death.—*Boston Med. and Surg. Journal.*

CASE OF RUPTURE OF THE HEART,

And Compound Fracture of the Thigh, in which the Patient survived twenty-eight hours and a half.

Reported by E. D. FENNER, M. D.

Wounds of the heart, almost inevitably fatal, are still very curious and interesting from the fact, that death does not always immediately take place; but life may be maintained for hours, nay, even several days, after a severe injury of this vital organ. Several such instances are recorded in the writings of the Profession.

In the case I offer, death did not take place until about 23½ hours after the accident. Perhaps it may be doubted whether the auricle was ruptured at the moment of falling; it might possibly have given way subsequently. Of course this must remain a matter of conjecture. I can only give the symptoms, and the appearances after death.

John Lugo, a robust Italian sailor, aged about 30 years, was brought to the Charity Hospital at 2 o'clock, A. M., Aug. 28th, 1843. He had fallen from a window in the fourth story of a house, down upon the pavement below. This occurred about two hours previous to his entering the Hospital.

The house-surgeon found him very much prostrated—pulse very small and weak—he was bathed in cold sweat, but was perfectly clear in his intellect, and gave a correct account of the accident. The right thigh was broken just above the condyles, and the upper part of the bone, exposed about three inches, rested over the Patella.

The leg being flexed upon the thigh, extension was made; the exposed end of the bone was drawn within the lacerated integuments, and the limb put in as comfortable a position as possible. A stimulant was ordered, to produce reaction, and the patient was left till morning.

In the morning considerable reaction had taken place—he was feverish and thirsty—body hot, but extremities rather cool—very restless, but did not complain of his head—intellect still clear. The visiting surgeon thought him in such a desperate condition that there was no hope of benefitting him. The stimulant was discontinued, and cool drinks ordered in its stead. The limb was adjusted well enough, and he was not disturbed. During the morning he rather overloaded his stomach with fluids, and vomited. The ward-nurse informed me that he now complained chiefly of his right shoulder. He had pain there, though nothing was observed amiss in the part.

In the evening he became much worse—after drinking some tea, he vomited again. As the night advanced he gradually sank, and died with but little struggle at half past four o'clock.

Autopsy.—The examination of the body was made at 11 o'clock, A. M., August, 29th.

The broken thigh was livid, and very much swollen up to the groin.

As mentioned above, the bone was broken obliquely, just above the condyles. These last were completely split apart. There was no fracture of the patella, or bones of the leg.

Chest.—Upon raising the sternum, a large quantity of dark

fluid blood was discovered in the right pleural cavity, in immediate contact with the lung. In searching for the source of the extravasated blood with my hand, I discovered an orifice large enough to admit the end of a finger, opening directly into the left auricle of the heart. This orifice was behind the pericardium—between the mouths of the pulmonary veins, and so close to the upper one, as almost to involve it in the rupture. It was somewhat oblong, and looked as if it had been torn. The heart was in other respects perfectly sound.

I measured 17 oz. of fluid blood out of the chest, and there was, perhaps, an ounce more that was not taken up. The lungs seemed perfectly sound. I now examined the abdominal viscera, but found nothing extraordinary or unsound, unless, perhaps, an unusual friability of the liver. The gall bladder contained ¾ iv. of healthy bile, and there was yellow bile found in the stomach and intestines. The extraordinary lesion of the heart above described, was witnessed by three other physicians, who were in the dead-house at the time.

The brain was not examined—the symptoms during life indicated no serious lesion of this organ.

It may not be uninteresting in connection with this report to give the following extracts translated from *Roche & Sanson's Elements of Pathology*:

“RUPTURE OF THE HEART.—Rupture of the heart is sometimes the consequence of softening of its tissue, or of its ulceration; and consequently one of the terminations of its inflammation; but it sometimes takes place without antecedent morbid state of this organ, and examples of it are not very rare. Sometimes it is produced by external violence, such as the passage of the wheel of a carriage over the thorax—anon it is the consequence of a violent effort—sometimes it is brought on by excess of fury, or by an attack of epilepsy, or by coition—in fine, in several cases it is some way spontaneous, and happens without appreciable cause, whether it succeed a morbid state of the heart, or happens spontaneously without anterior alteration of the tissue of this organ.

“It is nearly always in old persons that it is observed. It is superfluous to add that when it is the product of external violence, a fit of passion, an attack of epilepsy, or the venereal act, the age of the subject is immaterial. The promptness with which this affection produces death ordinarily, does not allow of a diagnostic, and renders it moreover useless.

“M. Bland thinks, however, that one can recognise the following symptoms, viz: the sudden manifestation of a sensation of boiling heat, of acute and deep seated pain, of a sort of constriction, or of disagreeable weight in the region of the heart, immediately followed by great anxiety, extreme weakness, pallor of the countenance, alteration of the features, the frequency and smallness of the pulse, which can scarcely be perceived, and finally by speedy death.

“Are these symptoms pathognomic? It is permitted to doubt them; and were they so—the rapidity with which death supervenes in nearly all cases, does not even allow them to be collected.

“Rupture of the heart takes place most commonly in the left ventricle, and towards the point, probably during its contraction. We often find the tissue of the heart about the rent, pale, slightly red or grey, softened, easy to crush between the fingers, or to tear; the borders of the opening uneven, ragged, and ordinarily parallel to the direction of the fibres of the heart.

“It is not rare to meet with the ventricle thickened at its superior part, and attenuated at the point, where the rupture takes place—sometimes the fibres of the heart are corroded or ulcerated in the portion broken or torn. In short the rent sometimes appears under the form of a crack or narrow fissure, more or less oblique, and without any morbid alteration of the parietes of the heart. Often there exists many of these fissures at the same time, and then, excepting that which has produced death, they are superficial. In all cases we find a greater or smaller quantity of clots of blood in the pericardium.

“Rupture of the heart may, however, not bring on death; it is necessary for this that it be very inconsiderable. It may then happen that a clot closes the opening, hardens there, adheres, and that even the edges of the orifice contract adhesions with the pericardium; there exists an example of this fact. The symptoms will be then those of carditis, or pericarditis, and the treatment that of these affections.

“Except in this case, all treatment is useless—nevertheless if the death is not sudden, we may have recourse to abundant

bleedings, general and local, as is practised in wounds of the heart.

"There is another rupture of the heart which bears only upon the columns of the ventricles; much more rare than the preceding; it was described for the first time by Corvisart; it is ordinarily after violent efforts that it happens. The symptoms are only well marked when it occurs on one of the pillars, which proceed from the free borders of the tricuspid and mitral valves. Then we see the individual suddenly pass from a state of health to the most serious morbid state; he is taken immediately with an extreme suffocation, and cast into a state of inexpressible anguish; his pulse becomes small, intermittent, irregular, and in placing the region of the heart, one only feels a confused pulsation. The patient ordinarily dies in a few hours; but sometimes he sinks slowly, with the symptoms common to all the diseases of the heart.—This rupture is nearly always mortal. The treatment is the same as in carditis, and consists principally in the employment of bleedings, general and local, absolute diet, diluent or acidulous drinks, and perfect repose of the body and mind.

"WOUNDS OF THE HEART.—An opinion which some surgeons entertain with the vulgar is, that wounds of the heart are necessarily and instantaneously mortal. Others, approaching nearer the truth, think that those only are fatal which penetrate the cavities of the heart, and that we can cure those which implicate only the thick part of the muscular parietes of the cavities. To support this last assertion they rely upon observations, the most remarkable of which is beyond doubt that which has been reported by M. Latour, and of which the subject was a soldier, in whose heart was found six years after the cure from his wound, a ball imbedded in the right ventricle, near the point of the organ, covered in part by the pericardium, and placed upon the septum medium.

"But the most of surgeons, relying upon numerous and authentic observations, think that wounds of the heart are not always either instantaneously or inevitably mortal, what portion of the organ soever, be the seat of the wound. Individuals have been seen who have survived many hours, even many days, the opening of one or the other ventricles; and what is very remarkable is, that in some of these cases the wounds were of very large size. Thus Paré saw a man, who, having been wounded in a single combat, continued to pursue his adversary and only fell at a distance of 200 paces, although he had in his heart a wound large enough to admit a finger.

"Courtial saw a man in whom the thrust of a sword had traversed the left ventricle, making a wound so large that at the post mortem examination one could introduce the little finger into it; and who, nevertheless, went 500 paces, and only succumbed after about five hours without having experienced oppression, or difficulty in the exercise of speech.

"Other observations, very numerous, prove that narrow wounds only cause death after many days.

"Saviard saw one which passed from the right to the left ventricle, traversing the septum, which only produced death after the fifth day.—Among these one of the most interesting, without doubt, is that reported by Le Range, in one of his notes to the edition which he has given of the Observations on Surgery by Saviard. The subject of this observation is a young man, who having been wounded by the stroke of a sword, and having immediately presented all the symptoms of a lesion of the heart, was happily put beyond danger of the first symptoms, and commenced leaving his chamber and walking about on the seventh day, but expired on the eleventh day from having indulged a wish to go to a cabaret. The opening of the body, done in the presence of Ferrand, proved that the stroke of the sword had traversed the lung, the pericardium, the right auricle, and the aorta through and through. Finally, other observations proved that wounds of the heart can be cured.

"Without speaking of animals slain in the chase, in the hearts of which have been found portions of arrows, or balls, which have been fixed there long since—without speaking besides, of individuals, who having presented all the rational symptoms of wounds of the heart, have been nevertheless cured; we borrow from Durand, an observation which proves incontestably this assertion, viz: "In the month of December 1769, during a very cold time, a cavalier of the royal regiment, after having received the thrust of a sword in the breast, and lost much blood, remained in a moribund state

from Tuesday till Saturday, couched upon a ladder, in the midst of the ruins of a demolished quarter.—The cold was such that this unfortunate individual had both legs frozen by it, and the mortification which followed was the cause of death—he had been hurried into death by the loss of blood, of his strength, and by the cold. The right lung had been pierced, and the right ventricle of the heart opened. The wounds had cicatrized during the five days that these viscera had ceased their functions. He lived yet ten days at the hospital, and would have withdrawn from it, if he could have proceeded methodically with the treatment of the gangrene of his legs."

"There results from these facts, that although the prognosis of wounds of the heart, is generally very serious, nevertheless we should not completely despair of the life of patients when the wounding instrument is small and sharp. The position of the heart renders the wounding of certain portions of it more easy than others. thus the right ventricle is undoubtedly, the most frequently affected by wounding instruments; after this, the left ventricle—and after these, the auricles.

"The diagnosis of wounds of the heart is always easy. The observation of Courtial that we have cited above, prove that the state of the wounded cannot present satisfactory signs of it; nevertheless in the most of cases, besides conjectures that can be drawn from the situation, the direction of the wound, and from a knowledge of the depth to which the wounding instrument has penetrated; the wounded man presents certain symptoms, which are regarded as signs of wound of the heart, such as dyspnoea, anxiety, frequent faintings, smallness and irregularity of the pulse, pain behind the sternum, pallor, cold sweats, and the ordinary symptoms of effusion in the cavity of the pericardium, or the breast."

Since the foregoing observation was made, another very remarkable case of wound of the heart has occurred in this city, the notes of which have been kindly furnished me by the attending-surgeon, Dr. A. Mercier, and are as follows.

Case.—In 1845, a young man of this city, aged 23 years, in a personal rencounter, was stabbed with a double edged dirk, which divided the cartilage of the seventh rib, and penetrated the left ventricle of the heart, in an oblique direction, making an opening more than an inch in width. As soon as his antagonist had inflicted the blow he attempted to escape, and ran off at the top of his speed. The wounded man followed in close pursuit for a distance of about 125 yards, when he sank upon the ground very much exhausted, but still able to tell who wounded him. A friend who was going out to the spot where the altercation took place, but had not reached there before the chase commenced, followed the combatants as fast as he could, but only overtook the wounded man after he had run the distance above mentioned. The hemorrhage was profuse from the instant of the stroke, for the blood could be traced along the pavement the whole way. He was taken home, and Dr. M. arrived to see him about three quarters of an hour after the accident occurred. Dr. M. found him in a state of insensibility, his heart beating feebly, and only about four or five times in the minute. There was no pulsation to be felt at the wrist. On removing his clothes, about two pounds of clotted blood were found within the shirt—the wound was closed by a clot, and the hemorrhage thus stopped. Stimulants were poured down his throat, and other means used to produce reaction, which began to be evident in fifteen or twenty minutes—he spoke; answered questions, recognized his father and friends, and was conscious of his perilous situation. His pulse now became perceptible at the wrists, beating about twenty-two to the minute. He remained in this state for more than two hours after Dr. Mercier first saw him, and then suddenly expired, more than three hours after receiving the fatal stab. At the instance of the Coroner, Dr. Mercier made the post mortem examination.

Autopsy.—On raising the sternum a very firm coagulum was observed to extend in the course of the wound, from the external orifice clear into the ventricle, closing the wound completely. As before stated, the wound was more than an inch wide, and would freely admit any of the fingers. The pericardium contained six ounces of clotted blood. No blood was found in the pleural sac, as it had not been opened. The examination was not carried any farther, as it was already perfectly satisfactory.

Thus have I detailed the particulars of two cases, almost as remarkable as any given in the foregoing interesting quotation. The records of surgery abound in instances where men have survived for a longer or shorter time the most dangerous wounds, whilst on the other hand, many have been known to die from ap-

parently the most trivial. The above cases are only given to show what serious injuries so vital an organ as the heart may sustain without causing immediate death.—*New Orleans Medical and Surgical Journal.*

CURE OF ANEURISM BY ELECTRO-PUNCTURATION.

M. Pétrequin, Surgeon-in-chief to the Hotel Dieu of Lyons, and Prof. of Med. in the same city, has lately reported two successful cases of this kind,* in confirmation of those reported on a former occasion.

The first was a bad case of popliteal Aneurism, as large as a goose-egg, in a patient 70 years of age, treated by Dr. L. Ciniselli, Surgeon of the Hospital of Cremona. The operation was performed on the 22d of January; the current from a small galvanic pile was passed through the aneurismal tumour by means of four needles introduced into it. The force of the arterial wave was checked, during the operation, by a compress and, subsequently, a bladder filled with ice was laid on the tumour to favor the coagulation. Immediately after the operation there was but little sign of amelioration; but twenty-four hours afterwards the pulsations were found to have ceased; and the tumour from that time gradually disappeared.

The second case, treated by M. Pétrequin himself, was of the humeral artery, at the bend of the elbow; the result of phlebotomy. It was as large as a hen's-egg and the patient was about 30 years of age.

By means of four sharp acupuncture needles, introduced at four opposite points of the tumour, the electricity of a voltaic column of 60 elements excited by cloth moistened with sal amoniac, was passed through the sac. The artery was compressed, during the operation, by an assistant. The current was passed successively through the two pairs of needles.

The tumour began to be diminished in ten minutes and the fluid felt as though it contained coagula and had become of a pasty consistence. In fifteen minutes the tumour had become hard; and pulsations could no longer be felt in it although the compression of the artery was removed. The operation was, however, continued for five minutes longer. A compress was then placed on the artery and a bladder of ice on the tumour.

The cure was fully completed, after some time of treatment for local inflammation of the part and suppuration of the aneurismal sac.—*Western Lancet and Medical Library.*

MODE OF ARRESTING HEMORRHAGE FROM LEECH-BITES.

Dr. Houston recommends the following plan for preventing excessive bleeding from leech-bites, which he has found invariably successful. Take a small pinch from the felt of a beaver hat, pile it on the bite; or if there be several points, pile one respectively on each, and spread over the whole a piece of thin muslin, drawing it tightly, so that any blood which flows must pass directly through both; then with a fine sponge drying up the blood as it oozes out, and in a short time both felt and muslin will have become dried by the coagulation of the blood in the thin fine meshes, and the hemorrhage arrested. The muslin may then be all cut away, except the adhering points, which, in the course of a couple of days, will of themselves drop off, leaving the parts healed, and free from any such disfiguring marks as those which necessarily follow cauterizing, caustics, or needles.—*Dublin Hospital Gazette.*

PHYSIOLOGY.

ON THE CAPACITY OF THE LUNGS,

And on the Respiratory Movements with the view of establishing a precise and easy Method of detecting Disease by the Spirometer.

By JOHN HUTCHINSON.

Proceedings of Medico Chirurgical Society, April 28.

After giving an introduction to the subject by a history of respiration, from the earliest period to the present, with an account of what researches have hitherto been instituted upon this inquiry, the author commenced by dividing the different portions of respired air under certain heads, without which the subject of respiration becomes very complicated and difficult of expression. He remarks—“The latitude of movement performed by the walls and floor of the chest, to maintain a constant current of air through the air cells of the lungs, admits of three common degrees of expression:—1. Extreme expansion, or enlargement; 2. Extreme contraction, or diminution; 3. An intermediate or quiescent state.

“These divisions necessarily superinduce a difference in the quantity of air respectively drawn in or thrown out of the lungs.” These movements or portions of air he described, for perspicuity, under five heads:—

1. Residual air; 2. Reserve air; 3. Breathing air; 4. Complemental air; 5. Vital capacity.

This division was clearly illustrated by different diagrams, and may be expressed best in the author's own language:—

“It is well known that the lungs are not capable of being emptied by the most violent muscular effort; therefore, at all times as long as the lungs maintain their natural structure during life or death, a certain quantity of air remains in these organs, which is termed ‘residual air,’ and over which we have no control.

“‘Reserve air.’—The gentle respiratory movement regulating the ordinary breathing, is an intermediate effort between extreme voluntary thoracic contraction and dilatation, and hence it is that a portion of air always remains in the lungs after the gentle expiration, which may be thrown out if required; to it I have applied the name ‘reserve air.’

“3. ‘Breathing air.’—That portion required to perform the ordinary gentle inspiration and expiration, which we term, ‘breathing air.’

“4. ‘Complemental air.’—That portion which can at will be drawn into the lungs by a violent exertion, beyond the moderate effort of ordinary breathing, which constitutes the deepest possible inspiration, is only occasionally added if required; to this we apply the term ‘complemental air.’

“5. Vital capacity in all these three latter divisions combined, being the greatest voluntary expiration, following the deepest inspiration, to which I apply the term ‘vital capacity.’

“These divisions differ in their character. The residual air is independent of the will, and always in the chest. The reserve air, to use a simile, is a ‘tenant at will.’ The breathing air constantly passing out and in the chest. The complemental air seldom in the chest, and when it is, only so for a brief period.” The connection of these with diagnosis in disease here followed, and the whole subject of the paper, resolved itself under the following heads:—1. The quantity of air expelled from the lungs in connection with other physical observations on the human frame. 2. The absolute capacity of the thorax, cubic and superficial measurements. 3. The respiratory movements and mobility of the chest. 4. The inspiratory and expiratory muscular power. 5. The elastic power of the ribs, and the voluntary muscular respiratory power. 6. The function of the intercostal muscles. 7. General and practical deductions in reference to detecting disease in man.

Each of these subjects was fully treated, and much valuable information, both for the physician and the physiologist, will be there found, but which we must here pass over, and simply add, that Mr. Hutchinson has examined upwards of 2000 cases with reference to respiration, and that the quantity of air exhaled from the lungs is affected by four circumstances—height, weight, age, and disease. By height, in the arithmetic progressions of eight cubic inches for every inch of height. By weight, nearly in the ratio of one cubic inch for every pound to eleven stone, and then

decrease nearly in the same rotation up to fourteen stone. By age (from thirty-five to sixty-five), a decrease of rather more than one cubic inch per year.

Under the second head, much curious and new matter appeared in relation to the actual capacity of the thorax and the vital capacity, and the relative size of the chest to the body. Under the third head, the respiratory movements in health and disease, as measured by the spirometer. Under the fourth head, the muscular power in relation to health. Under the fifth head, entirely new considerations of the combined forces of elastic or involuntary power, and muscular or voluntary respiratory power. Under the sixth head, the intercostal muscles being true expiratory muscles. Lastly, general and practical deductions.

Here Mr. Hutchinson gave many interesting cases of the spirometer detecting phthisis pulmonalis, before the ordinary means now in vogue, and many other subjects relative to the application of his instrument to disease generally in the human frame, which he demonstrates as very broadly marked by twenty-five or thirty per cent. Mr. Hutchinson's spirometer was exhibited before the Society, and its methods of application explained.

Dr. Taylor considered the Society much indebted to Mr. Hutchinson for the laborious investigations which he had undertaken, and now submitted to them with such ample illustrations. From the fact that an abstract only of this paper could be read, and from the novelty and the variety of the views submitted to them, it could not be expected that the members could appreciate at once the true value of the observations of the author. The importance of the results arrived at could not be doubted, if they should turn out to be true; but the results of an investigation so entirely original ought to be received with due caution, until they have been confirmed by other observers. Some very curious results arrived at by Mr. Hutchinson, might be added, to show the great importance, in a science like medicine, of our being guided by observation alone; for although they are not inconsistent with any known principles, they are very different from the conclusions at which we should have arrived by *a priori* speculation; such, for instance, is the law that the quantity of air which can be expired bears but little relation to the girth of the thorax, but is influenced mainly by the height of the individual.

Perhaps the most important fact discovered is this—viz., that if the height of the individual be known, the number of cubic inches of air which he is able to expire in the healthy state can be calculated with tolerable accuracy. The principle of this calculation is founded upon a great number of observations, and we have just had the fairest and most convincing proof of its correctness. The gentleman who has just now offered himself to be experimented upon, has actually expired within a cubic inch of the quantity of air calculated beforehand.

The application of this principle in the diagnosis of disease is most important. Mr. Hutchinson has found that persons who are subjects of phthisis expire a quantity of air very much less than they ought to do if healthy. In one interesting case (that of Freeman), the quantity of air expired when he was in health was actually measured, and the experiment being repeated some time after, this man was found to expire ninety cubic inches less than on the first occasion; at this time no disease in the lungs had been detected by two experienced auscultators; the man, however, was not in good health, and some month afterwards he died of phthisis, as proved by post-mortem inspection. I myself examined a number of consumptive patients by Mr. Hutchinson's apparatus; I have found them to expire much less air than, by calculation, they ought to do if in health. Another singular and very important result is this, that the quantity of air which a man can expire is not necessarily proportioned to the absolute size of his lungs or the number of cubic inches of space in his chest. We have seen, in the casts exhibited, that the lungs of one man who expired a large quantity of air were actually much smaller than the lungs of another man who expired a far less quantity. Mr. Hutchinson believes that the quantity expired depends less upon the size of the chest or lungs than upon the mobility of the thoracic walls. The diminished quantity of air expired in phthisis seems to result less from the space occupied by the tubercular deposit than from the restriction which is in some way imposed upon the thoracic movements. The bulk of the tubercular deposit in one case was only equal to one cubic inch, whilst the diminution in the quantity of expired air was forty-seven cubic inches. Hence, by this apparatus, it may turn out to be possible for us to distinguish phthisis at an earlier period than by

any other means; and this has been actually proved in one of the instances adduced.

The same principle, however, complicates very much the application of Mr. Hutchinson's results in the differential diagnosis of disease. Many diseases, without the chest as well as within it, may limit the respiratory movements, and so lessen the quantity of air expired. So that, for the present, a great diminution of the expired air can only be considered to indicate the existence of disease somewhere; the seat and nature of this disease must be determined by other means, unless further investigation shall render the indications of the spirometer more precise than they are at present. As much has been accomplished in this direction as we could look for from one individual, and in a limited time. Mr. Hutchinson has done enough to make it incumbent upon physicians generally to prosecute the investigation, so as to lead the confirmation of invalidation of his views, as well as to their extension and limitation in particular cases. In the hospital to which I am attached, one of the spirometers has been purchased, and a certain number of observations have been made, which, as far as they go, quite confirm those of Mr. Hutchinson.

A great advantage in the use of the spirometer in disease of the chest is this, that comparatively little education is required for it. The practice of auscultation requires a long education and constant application; the spirometer may be used, for the purposes to which it is applicable, with very little previous study. Hence the importance of the instrument, as pointed out by the author, to army and navy surgeons, to insurance companies, and in private practice, generally.

After the paper had been read, Mr. Hutchinson illustrated the method of making an examination. Taking himself as an example, he observed, that though his chest was small, (thirty-three inches in circumference), yet, according to his mere height, his vital capacity was 260 cubic inches; noting, at the same time, that the person being examined should hold himself as erect as possible, the least inclination of the head causing a difference in the quantity of air expired. A Fellow of the Society having complied with the request to come forward and submit himself to experiment, his height was found to be five feet five inches, and accordingly the quantity of air he could expel should, by the tables, be 206 cubic inches. The gentleman then breathed into the spirometer, and actually produced 205 cubic inches, which making allowance for temperature, made it 206 cubic inches. This was so satisfactory, as to leave no doubt on the mind that these tables must have been calculated with care, and upon an extensive number of cases. Many questions were put to the author upon the different subjects of which the voluminous paper treated.

Dr. Chowne requested to know whether any explanation could be given for the following curious phenomenon, which was strikingly opposite, touching the relation of the chest to the respiratory power.—Why the mere height bore so strict a relation to vital capacity, and not to the size of the chest.

Mr. Hutchinson, in reply, observed, that he had found this hitherto inexplicable. It was a fact, that the taller a man, the more air he could expel from his lungs; and he considered that this quantity was directly dependent upon the extent of thoracic and abdominal mobility, and not upon the actual capacity of the cavity of the thorax. He referred to a series of casts taken from the chest—the heart and lungs having been first removed, and their space filled up with plaster of Paris. He exhibited one cast, taken under most favourable circumstances; the individual while living, and apparently in health, he had measured; his vital capacity, making correction for temperature, is 251 cubic inches; while the actual cubic space in his chest for the organs of inspiration was only 248 cubic inches, being three inches less than the actual quantity breathed; therefore this marked a respiratory mobility exceeding the actual capacity of the thorax. Therefore, while the spirometer measures the vital capacity, it becomes at the same time a measurer of the mobility of the parts concerned in the breathing act. Now to measure the mobility is to determine the respiratory movement, which he illustrated by drawings as extending over the whole trunk of the body down to below the knees; therefore whatever interfered in these parts to prevent the range of movement, would, at the same time, be indicated upon the spirometer, and collateral observation would determine more minutely the locality affected. He could not here omit mentioning another circumstance which militated against an opinion prevalent at this day. It was commonly believed that adhesion of the pleura prevented the free movements of the chest; but this he believed was not the case, for he had found that in

the instance just mentioned, where the mobility exceeded the actual thoracic cavity, there was no part of the pleura pulmonalis but was firmly adherent to the pleura costalis. So much was this the case, that the heart and lungs could not be weighed separately, their structure being totally destroyed in removing them. Here was a mobility exceeding by three cubic inches the actual space allotted for the heart and lungs, with the parietes and floor of the chest firmly adhering to the lungs. He believed that the latest movement of the ribs was so little, or the latent movement between the contents of the chest and its boundaries so limited, that no adhesion interfered with the respiratory actions. This was worthy of attention, the contrary opinion appearing to prevail at present.

Mr. Hutchinson pointed to a cast of a chest measuring 457 cubic inches, while 202 cubic inches of air only could be exhaled; or not one half of the space allotted for the organs. This man was corpulent, and only 5 feet 8 inches in height; therefore his mobility was mechanically impeded. Why this mobility increased with height, he felt as much at a loss to account for as he did the first day he commenced the investigation. But he was confident it was so, as upwards of 2000 cases went to prove it.

Mr. Hutchinson then pointed to a curiously interesting table, where all the heights, increasing in the arithmetical rotation of inch by inch between five and six feet, were drawn by scale, and upon these the relative depth and breadth of the chest, so that the whole proportion of the frame was exhibited. The thoracic cavity was seen not to increase in any visible relation with the increasing height; the taller men here exhibiting smaller chests, in all dimensions, than the shorter. Moreover, it was remarkable to observe how shallow the chest was, the average depth, from the apex of the lungs to the diaphragm, being only from seven and a half to eight and a half inches; and that the shortest men (five feet four), who could blow least, had the deepest chests of all the other heights. The absolute length of the back also appeared to have nothing to do with the question, for he had taken the sitting height and the standing height, which averaged three feet, whatever was the standing height; and that men whose standing height was many inches shorter than others, who sit taller, yet blow less out of the lungs. Here Mr. Hutchinson said he must quit this part of the subject, "for years have I studied to determine this question, but in vain."

Mr. Hutchinson was asked upon what grounds he imagined that the chest in deep expiration did not enlarge by the diaphragm descending; this being the present and general opinion of physiologists. He replied, that he had invariably found, in health, that when a man stood and made a deep inspiration, the movements were as described by the diagram already referred to—viz., that the chest, in this violent effort, enlarged its dimensions almost entirely by the ribs; the sternum advanced, the ribs and shoulders were elevated; the abdomen receded, compressing the abdominal viscera; the lateral enlargement of the chest was very small, chiefly increasing in the antero-posterior diameter. Now he considered himself at a loss to conceive how the diaphragm could descend and the abdominal muscles recede; the point of the recti muscles, in deep inspiration, would be found as posterior to the point of these muscles in ordinary breathing; therefore the diaphragm must be pushed up, and it was perfectly possible to conceive the diaphragm to enlarge its circumference without descending; for the convolution of this muscle was such that its area was nearly quadruple that of the sectional area of the chest. The ordinary breathing was entirely abdominal or diaphragmatic in men; but the contrary in deep breathing. The chest appeared to have two ways of enlarging—one by its diaphragm, and the other by its ribs; but these did not act in concert, either by one or the other separately. This observation must not be made in the recumbent position, for then the back of the body becomes fixed, and thus medical men might be led into an error in examining the breathing movement of a patient in bed, when the very position altered their motions. From a knowledge of this, he was inclined to believe that this fixing of the back in the recumbent position caused patients labouring under dyspnoea to prefer the erect position for breathing.

The breathing in women differed from men only in one respect: their ordinary breathing being chiefly costal, and not abdominal. Whether this was to allow for gestation or not he could not say; he thought there was some doubt of its being caused by the peculiarities of their costume.

Mr. Hutchinson was then asked by Mr. Ayston whether there was any relation between the respiratory power and the respiratory

quantity in vital capacity? To which he replied, there was a certain indirect relation. It was seen that the vital capacity increased with mere height; but by another instrument exhibited before the society, that the inspiratory power was greatest at the height of five feet eight inches, and decreases in regular progression as the height increases; and that the men of five feet eight inches could elevate by the true inspiratory muscles a column of three inches of mercury, equal, in some cases, depending upon the size of the chest, to many hundreds of pounds' resistance to their muscles, whereas the six-foot men could only do two inches and a half, and that the expiratory power was one-third higher, but not from the muscular power, but the elastic power, of the ribs being here introduced, which is not so in the inspiratory act. This inspiratory power, he considered, indicated the *vitalité* of the individual more than the expiratory power, which was affected by vocation. An elaborate series of calculations were contained in the paper upon the elastic power, and the muscular contractile power alternating in every inspiration and expiration. But this question cannot, in justice to the author, be abridged; therefore the paper must be consulted, as this is a question for the closet. This elastic power has hitherto been very slightly treated by physiologists, and the circumstances under which Mr. Hutchinson determined his views are so rare and conclusive, and we may say impossible of being obtained again, that they demand the full inspection and consideration of the physiologist. But this much may be added, that Mr. Hutchinson considers the inspiratory act as demanding a muscular power to resist an elastic power of many hundreds of pounds; that is, a direct resistance to vital energy, with no counterbalance power.

Mr. Hutchinson was asked whether he had examined any men of remarkably small stature, whose height, as they sit, is not so remarkable as their standing height.

He replied, that he had, in the course of his observations, sought out the giant and the dwarf. He then handed a spirited sketch of a human being, whose height was under thirty inches—Don Francisco, aged forty-two. This little gentleman had a vital capacity of fifty-six cubic inches. He then exhibited the shade of the hand of Mr. Randall, seven feet high, the span of whose hand was nearly thirteen inches, and the length of his foot thirteen inches and a half. He had a vital capacity of 464 cubic inches, at 60°, which, if calculated at 98°, the temperature of the body, must bring it nearly to 500 cubic inches!—*American Journal of Medical Science.*

MEDICAL JURISPRUDENCE.

LANCASTER QUARTER SESSIONS.

HON. ELLIS LEWIS, PRES'T.

Con. vs. Elisha F. Hoover. Indicted for fornication and bastardy, with Catharine E. Rife. This trial lasted two days, and excited considerable interest from the vigour with which it was conducted, and the novelty of the defence. The complainant swore that the child was begotten on the 23d of March, 1845, and born on the 30th of January, 1846, making the period of gestation 313 days—being 33 days over the usual time. The defence relied mainly on the time, and called several physicians to prove the impossibility of gestation being protracted so much beyond the usual period. Doctors Kerfoot, Burrowes, Alexander, Cassidy, J. S. Carpenter, Smith and Leonard, testified with more or less positiveness against the possibility of protraction. Dr. Kerfoot considered that nature had established nine calendar months as the period of healthy gestation, and that that period could not under any circumstances be materially extended. Dr. Burrowes had formed his opinion from the absence of facts; he had never known gestation to exceed nine calendar months, and did not believe it possible. The other medical gentlemen called on the part of the defence concurred in substance with these, though they all admitted that the books generally held differently.

The prosecution called Doctors John L. Atlee, F. A. Muhlenberg, P. Cassidy, H. Carpenter, Fox, and Baker.

Dr. J. L. Atlee was of opinion that the ordinary period of utero-gestation was nine calendar months, or from 270 to 280 days—that, although improbable, there was a possibility of its being protracted to 313 days. He had formed his opinion from two cases which had occurred in his own practice, in which, by all the usual methods of calculation, the patients must have gone

at least ten calendar months—from the testimony and opinion of standard authors—such as Wm. Hunter, Burns, Merriman, Blundell, Velpeau, Moreau, Dewees, &c. &c.—and from analogous cases among domestic animals, as proved by experiments made with great care, particularly by M. Tessier, in France.

The other gentlemen called for the prosecution concurred in the opinions of Dr. Allee, for various reasons stated, which we have not space to report.

Charge of the Court.—Com. vs. Elisha F. Hoover. The defendant is indicted for fornication and bastardy.—The prosecutrix, Catharine Rife, is a competent witness, but her credibility is for the jury. According to her account, the child was begotten on the 23d of March, 1845. It was born on the 30th January, 1846—a male, fine, large and healthy. The period of gestation was 313 days. It is conceded that the defendant had no intercourse with the mother after the 23d of March, 1845, and the time of delivery is fixed with equal certainty. A question of science has arisen respecting the possibility of protracted gestation.

The usual period is nine calendar months, or from 273 to 275 days. What has been denominated the *extreme of the usual period* is 280 days, or ten lunar months. But whether any, and if any, what longer time may be allowed as possible, are the questions which this case presents for decision. Medical writers of celebrity and authority are arrayed on both sides of these questions. And the medical witnesses upon the stand are, in like manner, divided in opinion. In construing this evidence, so far as respects the *facts* narrated by each, it is proper to consider that writers and witnesses are respectively relating only the results of their own knowledge: and, when one states that no case of protracted gestation has fallen under his observation, it is but negative testimony, and cannot justly be relied upon to invalidate the affirmative evidence of others equally entitled to credit, who enumerate cases of the kind, which they positively affirm to have come within the range of their practice and knowledge. In the most familiar transactions of life, witnesses will differ in their narration of the circumstances. In an account of a simple assault and battery, the bystanders frequently vary in their statement of the facts. Some narrate incidents which others omit. Conceding all the witnesses to be equally worthy of credit, the rule is to reconcile their evidence so that all will stand consistently together, if this be reasonably practicable. Some witnesses observe circumstances which others have not seen. Negative evidence is therefore deemed insufficient to outweigh affirmative statements of witnesses equally entitled to credit. One gentleman, in a long course of practice, may have failed to observe any case of the kind. Another, in a very brief period, may have noticed several. And it is reasonable to believe that where such a diversity of opinion exists, each will be in some measure influenced by his own professional experience; and that this will also, to some extent, affect his belief in the cases reported by others. There are doubtless many of these cases where the struggle have been involved, have furnished temptations to falsify, and may have influenced the decisions of the tribunals. But, after making all proper allowances for cases of this description, the whole evidence on the question, when fairly considered, appears to show that cases of protracted gestation are not impossible, although their existence is very unusual.

The heads of wheat in the same field do not all ripen together. The ears of corn on the same stalk do not all come to maturity at the same time. Even the grains of corn on the same ear ripen at different periods. The fruit on the same tree shows the like deviation. A portion will ripen and fall, while other portions remain comparatively green upon the parent stalk. The eggs of the fowl, under process of incubation at the same time, are subject to the same variation. In quadrupeds, if the testimony of M. Tessier be believed, we have proof of the like irregularity. Whatever may be the causes, operating in each case, to divert nature from her accustomed course, to accelerate or delay her usual progress, the human species, like the rest of creation, seems occasionally under their influences. The developments of puberty, although generally shown at a certain age, are far from regular. Some individuals approach it earlier—others later in life. Intellectual maturity is subject to the same irregularities. Some are precocious, others astonishingly tardy in arriving at the usual degree of discretion. The intervals between the catamenial visits, although in general regular and fixed, exhibit remarkable deviations. The final departure of the catamenia, although generally to be expected at a certain age, is as irregular as their first

approach, and as subject to variation as were their periodical returns. A certain period of life has been usually assigned for the termination of a mother's perils, but the instances of extensive deviations from this general rule are numerous and well established. The gestation of one child at a time is according to the usual course of nature, but the births of twins, triplets, &c., furnish indubitable proofs of astonishing departures from the usual course. The sensations of the mother produced by the elevation of the fœtus from the cavity of the pelvis, (called quickening,) although usually occurring at a certain period, are known to be subject to the like departure from the usual time.—It has been said that human life does not generally extend beyond 70 years. But if this be the general rule, the departures are numerous. The most distinguished jurist perhaps, now living in the whole world, (Chancellor Kent,) will be 83 years old on the 31st of July next; and yet, within a few days I have been honoured by the receipt of a letter from him, under date of the 18th inst., in which he states that he is still in "good and active health—that his relish and ardour for studies and legal learning continue unabated—that he has the blessing of good eyes, and that he is still an observer of what passes with lively sensibility." This instance may serve to illustrate not only the occasional deviation from general rules respecting the duration of human life, but the like variation in respect to intellectual vigour, by which one individual attains a pre-eminence over the generality of mankind. All Nature abounds with occasional departures from her general customs. Even the compass, which guides the mariner on the trackless ocean—which enables science to fix with reasonable certainty the boundaries of kingdoms and farms, and the truthfulness of which to its accustomed law has been perpetuated by a proverb—is subject to mysterious but acknowledged variations.

From analogy, and from the statements of distinguished authors and eminent witnesses, after making every allowance for mistakes, and the operation of unfavorable influences, we are led to the belief that, although Nature delights in adhering to her general usages, she is occasionally retarded in her progress, and otherwise coerced, by causes not always apparent, into extensive deviations from her accustomed path.—And we are induced to believe that protracted gestation, for the period of 313 days, although *unusual and improbable*, is not *impossible*. The evidence to establish the existence of such a considerable departure from the usual period, should be clear and free from doubt. The witness should possess a character beyond reproach, and her testimony should be consistent and uncontradicted in all material facts. If the jury are satisfied that the evidence for the commonwealth is of this character, the unusually long period of gestation does not require them to disregard it. The law fixes no period as the *ultimum tempus parienti*. The usual period has been stated, but longer time may be allowed, according to the opinions of physicians and the circumstances of the case. The question is, therefore, open for the decision of the jury. If they believe the witness, they may find the defendant guilty.

[Here the court drew the attention of the jury to the prominent facts, tending on the one side to impeach, and on the other to support, the credit of the prosecutrix; and then left the case to the jury, with the direction that, if they entertained reasonable doubts of the defendant's guilt, he was entitled to an acquittal. April 24, 1846. ELLIS LEWIS.]

NOTE.—A lady of respectability was examined on oath, in the course of the trial, and stated that she had been the mother of nine children—that to the best of her judgment and belief, the period of gestation, in the case of the seventh child, was over ten months. That in addition to the usual data, she relied upon the time of quickening, which happened, as she believed, at the usual time, and that the birth of the child did not take place until seven months after that event.

The jury found the defendant guilty, and the usual sentence was passed upon him.

Frazer and Mathiot for the commonwealth—Stevens for the defendant.—*American Journal of Medical Sciences*, Oct., 1846.

CHEMISTRY, MATERIA MEDICA, &c.

MANUFACTURE OF VINEGAR, BY THE NEW OR QUICK METHOD.

(Chem. Gaz., vol. i., p. 130.)—The acidifying casks used in this process are generally from 5 to 7 feet high, and 2½ to 3 feet

in diameter, somewhat narrower at the bottom than at the top, and constructed of oak. At about a foot from the bottom, and just above the cock by which the acidified liquid is drawn off, the tub is perforated by six holes, about an inch wide and sloping downwards, through which the air may enter, but none of the liquid flow out. The vessel is closed by a cover, in the centre of which a hole has been made 2 to 3 square inches wide. These vessels are now filled with curled beech shavings, which must neither be too thin nor too thick, otherwise they possess too little elasticity, and in the latter case do not curl. Previous to use both the tubs and shavings should be repeatedly scalded with hot water to extract the soluble substances, and when dried imbued with hot vinegar. These vessels are arranged on wooden framework, or on a pier of brick-work, sufficiently high to allow of the liquid being conveniently drawn off.

The manufacture of vinegar is now carried on in the following manner:—The vinegar mixture should contain two-thirds less alcohol than prescribed, and also less vinegar. For instance, suppose the vessels holding the mixture to contain 180 quarts, the mixture should consist of 20 quarts alcohol, 40 vinegar, and 120 quarts water; but instead of this a mixture is formed of 20 quarts vinegar, 15½ alcohol, and 137 water. The 7½ quarts alcohol that are wanting are subsequently added. It is requisite that the water should be heated to 100–104°, that the mixture may have a temperature of 86–90°.

According to the size of the acidifying vessels, from 2½ to 5 quarts of this mixture are poured on the shavings every half-hour, the vessels immediately covered with their lids, but the aperture left open. When all the prepared mixture has filtered through, the liquid contents are drawn off into the vessels in which the mixture was prepared, and 5 quarts of alcohol added. The liquid is now passed through the shavings a second time, and drawn off, the remaining 2½ quarts alcohol added, and again let percolate a third time.

The liquid which has passed through the shavings once forms a weak, the second time a strong, and the third time a perfectly good and very strong vinegar. The reason why the whole amount of alcohol is not added at once is, that even in a favourable course of the process a portion of the alcohol escapes conversion into acid, on which account first 5, and then 2½ quarts are subsequently added.

It will be seen how very simple the whole process is, and by calling to mind what has been above stated, the rapid formation of vinegar will be perfectly intelligible. What is the cause of the rapid formation of vinegar? It is the considerable increase of surface of the fluid to be rendered acid, that is, exposed to the action of the atmosphere, and the high temperature within the vessels. When the vinegar mixture has been brought into the acidifying vessels, it diffuses itself over the shavings, and the surface of the mixture becomes equal to that of the shavings, therefore certainly several hundred times greater than in the old method. The air which passes through the lower apertures of the cask gives off its oxygen to the alcoholic mixture, converts it into vinegar, and so escapes partially deprived of its oxygen through the aperture in the lid, because its specific weight has been rendered less by the heat of the vessel, and fresh air constantly passes in through the lower draught holes. The rapid oxidation of the alcohol naturally liberates much heat, which contributes considerably to keep the mixture at a proper temperature. If the room has a temperature of 77° Fahr., and the mixture about 82°, the temperature in the interior of the vessel will amount to between 95° and 100°; and it is essentially necessary that the interior of the acidifying vessels should not be less than 95°, otherwise it is a sign that the vinegar mixture is as it were in a diseased state; it breathes too little oxygen, and consequently scarcely any formation of vinegar takes place. To prevent, as much as possible, heat being carried off by the surrounding atmosphere, the vessels, with the exception of the 6 apertures in the cask and that in the cover, are covered with bad conductors of heat, such as linen or paper.

Some manufacturers advise keeping the room at a temperature of 100°, or even 111° Fahr., but this can only be accomplished in a room in which, on account of the great consumption of oxygen, a strong current of air must exist, at a considerable expense of fuel. The object said to be attained by this high temperature is, that the air which passes in at the apertures does not, on account of its high temperature, deprive the vessels of any heat. But far from this being of use, it is absolutely disadvantageous, for the temperature in the vessel becomes too high, which creates

too strong a draught, and the air carries away with it out of the vessels a quantity of alcohol and acetic acid; and moreover the acetic acid formed is more liable to be converted into carbonic acid and into a slimy substance, in a word, only a weak vinegar is obtained. In this new process for manufacturing vinegar, as in many other things, extremes should be avoided; there should not be too high a temperature, as this occasions a loss of acetic acid and of fuel; nor one too low, as this gives rise to an unnecessary waste of time and labour.

In the above exposition of the manufacture of vinegar by the quick process, we have hitherto spoken only of the preparation of an artificial wine vinegar or alcohol vinegar, but this process may be employed in making all the other kinds. When fruit or malt vinegar is prepared in the above manner, the liquid must be as clear as possible before it is brought on to the shavings, otherwise these soon become clothed with a slimy substance, which must be removed. When this has occurred, they are taken out, placed in a vessel, and cleansed with a broom and hot water, after which they are dried, and again brought into the acidifying vessels, and imbued with acid.

In conclusion, we may observe that it has sometimes happened that the manufacturer has found all his alcohol gone, and scarcely a trace of vinegar formed—a somewhat perplexing situation for one not acquainted with the freaks of chemistry. But the cause of this is easily found; the supply of air had been insufficient to allow of the alcohol undergoing perfect metamorphosis, and only aldehyde was able to form. This body is extremely volatile (it boils at 72°), and consequently soon disappears, and the manufacturer finds, to his surprise, his wine converted into water. One of the essential conditions in this process is, that the supply of fresh air should not be limited.—*Southern Journal of Medicine and Pharmacy.*

MODE OF KEEPING PLUMMER'S PILLS.

(Dublin Hosp. Gaz., 1846.)—These pills (pilulæ hydrargyri chloridi compositæ) ought never to be kept in mass; when the materials are kept mixed in a moist state, mutual decomposition takes place between the calomel and the brown sulphuret of mercury, chloro-sulphuret of antimony and sulphuret of mercury being formed. The powders should therefore be always kept mixed in the dry state, and when the pills are wanted, the mixture may be massed by means of a few drops of spirits of wine. It is well to recollect, however, that two parts of the mixed and dry powders are equal in strength to three parts of the pill mass; and the compounder, therefore, to fulfil the intentions of the prescriber, should employ of the dry powders but two-thirds of the quantity of pill mass ordered.—*Southern Journal of Medicine and Pharmacy.*

CEMENT FOR PORCELAIN AND GLASS.

(Polyt. Cent. Blatt, No. 12.)—The best and most beautiful cement for fractured porcelain and glass is, according to M. Keller, the following:—

Two parts of isinglass, cut into fine pieces, are left for 24 hours covered with 16 parts water, then boiled down to 8 parts, mixed with 8 parts alcohol, and strained through linen. The liquid is mixed while hot with a solution of 1 part mastic in 9 parts alcohol, and to the whole ½ part gum ammoniacum, finely pulverized, added gradually, and the liquid rendered perfectly homogeneous. This cement while hot is quite liquid, but on cooling becomes hard. In using it both cement and the fragments are made as warm as possible, both pieces allowed to dry, then again rubbed over with the cement, and pressed together. After five or six hours the cement is perfectly hard. It is not applicable to articles of porous earthenware; the best cement in this case is a thick solution of shell-lac in spirits of wine.—*Southern Journal of Medicine and Pharmacy, Nov., 1846.*

ON FERROCYANIDE OF POTASSIUM.

By F. F. RUNGE.

As ferrocyanide of potassium, when mixed with about a third of its weight of potash (carbonate), and thrown

into a red hot crucible is converted into cyanide of potassium and free iron, Liebig has made the apparently correct conclusion, that when azotized carbon, potash and iron are heated together, cyanide of potassium is alone produced, and that the ferrocyanide is produced during solution of the mass in water, as then the iron is acted on by the cyanide.

This may be the case in small experiments, but on the large scale it is not. The powdered mass produced by the fusion of 400 lbs. potash, 400 lbs. carbonized horn, and 10 lbs. iron, cannot be separated, as Liebig states, by washing with spirit into two parts, the liquid (containing the cyanide of potassium in solution) and the residual iron, so that ferrocyanide is first obtained on mixing and heating the two together.

If the finely pounded mass is put into a funnel, and spirit (equal parts water and strong alcohol) poured on it as long as it dissolves anything, two liquids are obtained, one heavier than the other. The heavier one is a solution of potash, the lighter contains cyanide of potassium. The black residue when boiled with water gives ferrocyanide in the same quantity as it is obtained from the whole mass. Hence it follows that ferrocyanide of potassium, which is insoluble in spirit, exists ready formed in the fused mass; and is not generated during the solution of the cyanide of potassium.—*Translated from Poggendorff's Annals by H. C.*

NEW EARTHS IN ZIRCONS.

By L. SWANBERG.

It appears that zirconia is no simple earth, but consists of several, as has been shown to be the case, with other oxides, viz., those of cerium, yttrium, and tantalic acid, and it appears that those new earths occur in different quantities in the zircons and hyacinths from different localities. That such earths, containing various proportions of oxygen, are contained in zirconia, was proved by a quantitative determination of the sulphuric acid contained in sulphates prepared in different ways.

Supposing that the formula for these earths is $R^2 + O^3$ similar to zirconia, their atomic weights determined by the above method vary between 938 and 1320, and for some between 1100 and 1140. Swanberg has not succeeded in discovering such differences in the earths as to enable him to separate them accurately from zirconia, but it appears there are certainly two, if not more. Norium is the name proposed for the earth accompanying zirconia in the zircons of Norway.

During the course of his experiments, Swanberg was induced to examine the zirconia contained in other minerals besides zircons and hyacinths, and for this purpose he chose the Eudialyte of Greenland. The zirconia contained in this rare mineral appeared at first to be identical with that prepared from zircons; but it afterwards appeared that it contains a number of substances mixed with it, some of which have been lately discovered, but others seem to be new.

Some of the earths are very similar to yttria, but not identical with it, nor with the other earths, Erbium and Terbia, lately found in it by Mosander.—*Translated from Poggendorff's Annals, vol. 66, H. C.*

RESEARCHES ON THE RELATIONS OF LIGHT AND MAGNETISM.

By M. FARADAY, Royal Institution, Jan. 23.

(*Athenæum*, No. 953, Jan. 31, 1846, p. 126.)

We shall confine ourselves to the method by which Professor Faraday exhibited the great fact of his researches—the rotation of a ray of light by magnetic force. The well known oxy-hydrogen light of Drummond supplied the ray. This light was so directed by an arrangement furnished by Mr. Darker, as to make distinctly visible, over the whole theatre, all the phenomena of circular polarization which were required to illustrate Professor Faraday's newly discovered principle. A beam of common light was shown to be separable into two distinct rays of polarized light; and the properties of these, and their relation to each other, were repeatedly demonstrated to the spectators. Such being the subject of his operations, Prof. Faraday next exhibited the nature and extent of the force employed to accomplish his results. That force is magnetism derived from an electro-magnet of immense size and power. The magnet used was a half link of the former East India moorings, surrounded by several coils of thick copper wire, and the source of electric power was Grove's battery, about twenty cells of which were employed on this night. To give an idea of the force of this electro-magnet, Prof. Faraday mentioned that once, while he was at work in the laboratory, an iron candlestick which happened to be standing on the table near its poles, instantly flew to them, attracted with such violence as to displace or break every thing in its way. The great experiment of the evening was then successfully tried. A prism of heavy glass was so adjusted between the poles of the magnet, as to receive the oxy-hydrogen light after it had been polarized, and before it was depolarized by Nicholl's eye-piece. The following facts, demonstrating the magnetism of light, were then exhibited:—

1. As to the rotation of the ray.—A polarized ray, having been extinguished by the depolarizing plate, was instantaneously restored when the magnetic current was sent through the prism through which the ray was transmitted; and conversely, the polarized ray, when, by the common adjustments of the plate, it had been made visible, was extinguished by the force of the current.

2. As to the relations of this electro-magnetic power to other laws of polarized light.—The rotation having been established, it was shown, (a.) That the direction of the rotation was absolutely dependent on that of the magnetic force. (b.) That, while in common circular polarization, the ray of light always rotates in the same direction with regard to the observer, (to whatever part of the medium his view may be directed,) it is very different in the state of the ray induced by this new force. When brought under the influence of the magnetic current, polarized rays always rotate in a constant direction with respect, not to the observer, but to the plane of the magnetic curves.

Prof. Faraday concludes, by throwing out some general notions as to the possible development of these researches in the line of future investigations. It did not seem impossible to him, that the sun's rays might be found to originate the magnetic force of the earth, and the air and water of our planet might be proved to be the diamagnetic media in which this condition of the force was eliminated.

M. Pouillet has repeated the experiments of Faraday, and communicated a report to the Academy of Sciences of Paris, (*L'Institut*, No. 630.) He is of the opinion that the phenomena are due to action on the transparent medium, or upon the forces which govern its molecules, and not on the luminous ray itself.—*American Journal of Science and Arts.*

THE British American Journal.

MONTREAL, DECEMBER 1, 1846.

LICENTIATES OF THE MEDICAL BOARDS OF
CANADA EAST.

We commence in this number the publication of the names of the various Licentiates of the Medical Boards of the Eastern part of this Province, commencing from

the year 1788. The list which we now give, is corrected from one published in "the Montreal Almanack, or Lower Canada Register for 1830;" and we will continue it in an early succeeding number. If our subscribers should meet with errors, we would be obliged by some early intimation of the circumstance.

† Henry Leodel	Montreal	Nov 24, 1788	Joseph Hensley	Rouville	June 21, 1822
Daniel Arnoldi	Montreal	June 22, 1795	James O'Leary	River Ouelle	Aug 9, 1822
Henry Munro	Montreal	Aug 17, 1795	† William Larue	Quebec	Sep 2, 1822
* J H Ferris	Chateauguay	1804	François H Seguin	Quebec	Sep 18, 1822
† Abner Rice	St Andrews	Oct 4, 1804	L Rousseau	Yamaska	Oct 5, 1822
Henry Porter	Quinzschien	June 17, 1805	James Dorion	St Ours	Oct 30, 1822
† George Carter	Three Rivers	Sep 5, 1805	Alexander Gillon	St Jacques	Dec 6, 1822
† A A Dame	River du Loup	Mar 24, 1808	John B C Trestler, MD	Montreal	Dec 20, 1822
† Jacques Labrie	St Eustache	Aug 12, 1808	George Roberts	Quebec	Mar 29, 1823
† Stephen C Blyth	Chateauguay	Aug 4, 1809	† Dugald M'Donald	La Baie du Febre	May 14, 1823
Joseph Painchaud, M D	Quebec	Jan 9, 1811	Anselm M Fraser	St Francis	July 15, 1823
† Wolferd Nelson	Montreal	Feb 13, 1811	† Michael Macculloch, MD	Montreal	Sep 6, 1823
† Calvin May	Missisquoi Bay	Feb 27, 1811	† John Hill Roc	Henryville	Sep 11, 1823
Henry V Rogers	Quebec	May 17, 1811	* William Roes	Quebec	Sep 15, 1823
Ant G Couillard	Montreal	June 12, 1811	Richard A Fortier	Nouvelle Beace	Dec 15, 1823
Jean Bte Lebourdais	Montreal	June 12, 1811	Benj. Bertholet, M D	Montreal	Dec 31, 1823
† René Kimbert, M D	Three Rivers	July 22, 1811	† Archibald Rae	St Andrews	Jan 17, 1824
† François C Duvert	St Charles	Mar 13, 1812	Brown Chamberlin	St Armand	Mar 1, 1824
M P S Laterriere	Eboulmens	Apr 23, 1812	† Alexis Demers	Montreal	May 24, 1824
† L M R Barbier	Berthier	Sep 7, 1812	† James Campbell, M D	Montreal	June 1, 1824
Samuel Newcomb	Quebec	Oct 10, 1812	† George C Rankin	Montreal	July 10, 1824
Thomas Horsman	Kamcuraska	Jan 7, 1813	† Wm J Vallée, M D	Montreal	Aug 5, 1824
† John Morley	Boucherville	Jan 18, 1813	Rodolph Steiger	Longueil	Apr 12, 1825
† François Fortier	Quebec	Mar 31, 1813	Joseph Nicholas	Boucherville	Apr 27, 1825
† J FB Lionais	Chambly	Mar 31, 1813	R C Weillbrenner	Boucherville	May 5, 1825
Thomas Fargues, M D	Quebec	Jan 11, 1814	W W Forrest	River du Loup M	June 17, 1825
* Robert Nelson	Hatley	Apr 15, 1814	† John Walker	Montreal	June 25, 1825
John Weston	Montreal	July 28, 1814	Elisha J Ransom	Quebec	July 25, 1825
† Wm Robertson, M D	Montreal	May 10, 1815	* Etienne Drolet	St Johns	Sep 22, 1825
William Thurber	Quebec	July 13, 1815	† Patrick Buckley	St Johns	Sep 25, 1825
Joseph Morrin	Montreal	July 15, 1815	Francis Murray	St Johns	Sep 30, 1825
A F Holmes, M D	Montreal	May 15, 1816	James Bowie, M D	Montreal	Oct 28, 1825
† Patrick Donnelly	St Roch Q	Oct 5, 1816	Samuel W H Leslie	Montreal	Nov 10, 1825
Thomas Bouthillier	St Hyacinthe	June 4, 1817	Charles Pellissier	Quebec	Feb 16, 1826
† William Caldwell, M D	Montreal	June 25, 1817	† Louis Dorwin	River du Loup	Feb 22, 1826
† William Fraser	Malbaie	July 2, 1817	* A W Robinson	St Vincent de Paul	Feb 27, 1826
† Neil M'Kernan	Montreal	July 14, 1817	Hamilton Leslie	Quebec	Mar 14, 1826
Bazile Charlebois	Montreal	July 26, 1817	J Bte Meilleur, M D	Montreal	Apr 5, 1826
† George Gillies	Montreal	Aug 15, 1817	Luke Bent	St Genevieve	Apr 12, 1826
† William Pardey, M D	Montreal	Oct 14, 1817	James Douglas	Quebec	Apr 17, 1826
Asa T Alexander	Lapraire	Oct 21, 1817	Charles H Castle	Montreal	May 4, 1826
L J C Caseneuve	L'Assomption	July 8, 1818	Michel F Valois	Pointe Claire	May 10, 1826
C N Perrault, M D	Quebec	July 24, 1818	Francis Badgley, M D	Montreal	May 19, 1826
A Von Iffland, M D	Yamaska	July 25, 1818	Lindsay Sims	Montreal	June 12, 1826
Henry Mount	Montreal	Aug 8, 1818	William Belin, M D	Assomption	June 19, 1826
C Alexander	Nicolet	Sep 4, 1818	† John Whitelaw	Trois Saumons	June 21, 1826
J Leduc	Vaudreuil	Oct 9, 1818	† Frs X O Boucher	Maskinongé	Aug 21, 1826
R S Bourdages	St Hyacinthe	Oct 13, 1818	Oi T Bruneau, M D	Montreal	Aug 30, 1826
Thomas Fortier	Gentilly	Oct 13, 1818	P D Brousseau	Montreal	Oct 17, 1826
Ernst Munchel	Aubert Gallion	Jan 29, 1819	Wm F Deschambault	Point aux Trembles	Oct 18, 1826
Etienne P. Tasché	St Thomas	Mar 18, 1819	Bernard Murray	Montreal	Nov 21, 1826
George Larue	St André	May 19, 1819	C G O'Dogherty, M D	Montreal	Nov 21, 1826
John Rowley	Quebec	June 14, 1819	Michael Mullolland	St Anne	Jan 2, 1827
Stephen Hicks	Sorel	Nov 1, 1819	William A Jardine	Laprairie	Mar 5, 1827
E W Carter	St Michel	Nov 22, 1819	Joshua Chamberlain	Dunham	May 10, 1827
Pierre Mackay	Montreal	Dec 4, 1819	François J Martin	L'Islet	May 23, 1827
† Alexander Lusignan	Quebec	Feb 12, 1820	Louis Girard	Henryville	July 4, 1827
* Hugh Caldwell, M D	Laprairie	Apr 3, 1820	Horatio N May	Three Rivers	Sep 3, 1827
* Simon Z Henry	St Giles	May 8, 1820	* Henry J Martin	Montreal	Sep 25, 1827
John Gray	Cap Santé	June 12, 1820	† F T C Arnoldi, M D	St Rose	Sep 22, 1827
J G Gaucher	Quebec	July 24, 1820	* Henry M'Dowall	Quebec	Oct 6, 1827
Jean Blanchet	Chateau Richer	Aug 1, 1820	† Alfred A Andrews	Quebec	Oct 16, 1827
E P Lamoureux	Quebec	Aug 29, 1820	* E B O'Callaghan, M D	L'Assomption	Nov 13, 1827
Joseph Parent	St Roch	Oct 20, 1820	† Truman Sterns	Quebec	Nov 13, 1827
† H P Barsalow	Isle Orleans	July 12, 1821	George Douglas, M D	Cedars	Dec 24, 1827
John Clark	St Johns	Aug 31, 1821	John M'Nabb	St Benoit	Feb 20, 1828
† Robert Hall	Montreal	Oct 19, 1821	† Jean O Chenier	Montreal	Feb 29, 1828
† John Stephenson, M D	L'Acadie	May 6, 1822	Pierre Beaubien, MD	Montreal	Feb 29, 1828
† Timoleon Quesnel	Becancour	June 11, 1822	F X Drolet	St Jean	Mar 15, 1828
† C Quesnel			† Joseph Lavaux	Quebec	Mar 15, 1828
			John Ed Rankin		May 1, 1828
			† John R Spooner		May 9, 1828
			William Blumhart		May 10, 1828
			† Jacob Glen		May 10, 1828
			Joseph Haller		May 10, 1828
			† Edouard Moreau		May 15, 1828
			† Thomas G Keegan		May 17, 1828
			† John Dormer		June 4, 1828
			† Thomas Alfred Panot	St Thomas	June 4, 1828

* Henry Stabinger . . .	St Hyacinthe . . .	June 14, 1828
Jean Bte Noel		July 3, 1828
John Barr	Belle Riviere . . .	July 16, 1828
Gabriel Aïmong	Chateauguay . . .	Aug 6, 1828
Samuel Wallor	Montreal	Aug 14, 1828
Leonard Brown	Durham	Sep 11, 1828
L U Grenier		Sep 25, 1828
† J M J Berthelot . . .	St Genevieve . . .	Dec 27, 1828
Joseph H Bernard . . .		Mar 4, 1829
Joseph Weillbrenner . .		Mar 5, 1829
† P C R Delabruere . . .	Boucherville . . .	Mar 6, 1829
* J C Belin Belair		Apr 14, 1829
Wilo H Fowler		Apr 16, 1829
† R M G Walmsley	Lacadie	Apr 24, 1829
James Brent		Apr 29, 1829
Uriah Laffin	Caldwells Manor . .	May 4, 1829
C P A Boucher	Maskinonge	June 5, 1829
J. B. Grenier		July 20, 1829
John Parker		Aug 7, 1829
Charles J Nowland		Aug 7, 1829
X B Blais		Aug 8, 1829
Otis Jenks		Aug 11, 1829
Charles Fleming		Aug 15, 1829
J C Fournier	St Gregoire	Sep 3, 1829
René Bedard		Sep 3, 1829
Pierre Martial Bardy . . .	St Jacques	Nov 13, 1829
Chas J Fremont, M D . . .	Quebec	Nov 16, 1829

Drs. Geo. Selby and F. X. Bender of Montreal, were two of the Commissioners originally appointed to examine Candidates for Licences, and therefore do not hold Licences themselves.

PHYSICIANS AND SURGEONS.

The dates of whose Licences have not been obtained.

† W Holmes, M D Quebec	† Gustave Iserhoff, Berthier
François Blanchet, do	† Joseph Karsl, ———
† William Lyons, M D do	Peter Leodel, Lavaltrie.
† William Hall, do	† Edouard Martineau Is Orleans
† M Mabbey, Montreal.	Perkins Nichols, Varennes.
† Simon Fraser, Terrebonne.	Moses Nichols, Sherbrooke.
† Aug Globensky, St Eustache.	† A Schiller, St. Rose.

N. B. Those marked † are supposed, or are known, to be dead.

Those marked *, are supposed, or are known, to have left the Province.

Quack Doctors and Medicines.—The following, extracted by the *Dublin Medical Press* from the *Journal de Chemie Med.*, is well worthy of imitation by "powers that be" in other places. The practice which the French authorities have thus repudiated, is one which is offensive to good taste, a violation of medical ethics, and, as far as advertisements in the public newspapers are concerned, productive of an incalculable degree of injury to the community, by the temptations offered to the purchase of quack medicines, which are thus placed before the public, with all the enticing allurements of false certificates of their efficacy in the cure of "all the ills that flesh is heir to:"—

"The Mayor of Lyons has just issued a proclamation, that no bills or placards announcing the treatment of any disease by particular individuals, or the sale of any particular medicines, shall be posted on any of the walls of the city, or otherwise exposed to public view: and further, that none of the public newspapers shall insert any such announcement in their advertisements or otherwise. A similar ordinance has been issued in Paris, and every city in France."

Progress of the Asiatic Cholera.—The following additional information relative to this fatal disease will be found of interest:—

Cholera in Persia.—The last Levant packet which arrived

at Malta brought the intelligence that the cholera had broken out in Persia, particularly at Teheran, where one of the brothers of the Schah has fallen. The Schah, with his court, had sought refuge in the mountains. It is feared that, as in 1832, this scourge may again visit Asia Minor and the Mediterranean.

The latest intelligence from Aden announces that the cholera had disappeared from that place, and that the troops were healthy.—*London Med. Gazette, Sept. 1846.*

Cholera at Aden.—This disease, which made its appearance at Aden early in May, has, in consequence of the changing of the monsoon, nearly vanished, isolated cases occurring only at intervals. During the five days it raged, upwards of four hundred persons were carried off, the deaths being four out of five attacked; the cholera is, however, rapidly advancing along the territory of Yemen, and fears may be entertained of its appearance on the shores of the Mediterranean. The disease is making dreadful havoc in India.—*Med. Times, July 18.*

Cholera at Kurrachee.—The seaport of Kurrachee, formerly one of the healthiest military stations, has, ever since it became known to us, been visited triennially by cholera. In 1839, and again in 1842, the amount of suffering occasioned by it was terrible, yet slight compared to that which it has just endured. Between the 13th and 23d June, above 8000 human beings were cut off by it, including 895 Europeans, of whom 815 were fighting men, 595 sepoy; and, it is believed, about 7000 natives, besides camp-followers, and inhabitants of the town, have died.—The pestilence had quitted Kurrachee, and was apparently creeping up the river. Fever of a very fatal kind had made its appearance amongst the European soldiers at Sukkur: its triennial visit is to be looked for next year. Her majesty's 17th had chiefly suffered: it was said they were to be moved down, while her majesty's 86th were to move up to Hyderabad.

An extremely dry season has been followed by an unusually wet one; between the 9th of June and the 17th of July upwards of thirty-five inches of rain fell.

The *Kurrachee Advertiser* states that 7000 of the inhabitants have been cut off by cholera—nearly 9000 victims in ten days' time.

"Of the 60th Rifles there died 4 sergeants, 101 men, 4 women, and 3 children. Total, 112.

"Of the 80th Regt.: 1 officer, 24 sergeants, 329 men, 17 women, and 16 children. Total, 387.

"Of the Company's Artillery: 4 sergeants, 19 men, 2 women, and 6 children. Total, 31.

"Of the 1st Bombay European Regt. (Fusiliers): 1 officer, 18 sergeants, 314 men, 9 women, and 23 children. Total, 365.

"Of the 3d N. I., 310 sepoy; of the 12th N. I., 236 sepoy; of the Belooch Batt., 49. Grand total, 1490; independent of the inhabitants."—*Naval and Military Gazette.*

Cholera in Holland.—This disease, under the mild form of what has been termed by the French *cholérine*, has made its appearance at Amsterdam and Rotterdam, and has already attacked a great number of individuals, but not one of the cases has proved fatal.—*Ibid.*, from *Gaz. Med.*

Montreal Medical Students' Society.—A Society among the medical students in this city has existed for a number of years. Simultaneously with the opening of the medical classes, it has been again this year re-organized, and, judging from the names of the parties who are to control it, we think, under flattering auspices for its efficiency. The Society holds its meetings fortnightly. Two essays on subjects of medical science are read, one of which must be, according to the rules,

contributed by the President; the other by some member in rotation. This part of the proceedings is followed by the report of a case furnished by another member; and the evening's deliberations are closed with an examination by the President on some subject of a medical or surgical nature, selected for the purpose at the preceding meeting. Societies of this nature, if their objects be strictly pursued, with avoidance of all subjects foreign to their legitimate end, may be rendered of incalculable advantage. There is no method more likely to render the student familiar with his profession, and to improve him in a knowledge of the several departments of it, than the interchange of ideas, the free discussion, and the cross-questioning which constitute the chief feature of such reunions. We wish the Institution well: but, above all, we wish every member of it the full benefit of its advantages, recommending every medical student to participate in them. The following are the names of its officers, the President being elected every three months:—

President—W. Wright.

Vice-President—C. H. Keefer.

Secretary—R. P. Howard.

Treasurer—S. Gauthier.

Committee of Management—L. Genaud, A. E. Macdonald, A. C. Macdonnell, and C. Johnson.

The Family Christian Almanac for 1847.—We acknowledge the reception from the author of a copy of the above publication. It is neatly printed, and contains the information usual in publications of the kind. It ought to be in the possession of every one who wishes information on the various subjects treated of.

Quebec Medical Board.—At the last Quarterly Meeting of this board, held on the 3rd, 4th, and 5th instant, the following gentlemen were examined and recommended for license.

Edward B. Donnelly, from Detroit, W. S.; John P. Russell, M. D., Joseph Painchaud, and John Fitzpatrick, from Quebec; Michel Thibault, Narcisse Bourgeois, Ls. Jos. Desmorais, Edmond Robillard, Francis Codd, and F. H. Cadwell, M. D., from the District of Montreal; Edward McDonald, from the District of Three Rivers, R. F. T. Kilbreth, from the District of St. Francis.

The names of the Licentiates at the last quarterly meeting of the Medical Board, for the District of Montreal, will be given in our next number.

BOOKS, ETC. RECEIVED DURING THE MONTH.

- Southern Medical and Surgical Journal, November.
- Medical Examiner, November.
- Dublin Medical Press, October 7, 14.
- Buffalo Medical Journal, November.
- Western Lancet, do. (Two copies.)
- Boston Medical and Surgical Journal, November 4, 11, 18, 25.
- New Elements of Operative Surgery, by Alfred A. L. M. Velpeau. Translated by P. S. Townsend; with notes, etc., by Valentine Mott, M.D. New York: J. & H. G. Langley.
- Missouri Medical and Surgical Journal, October.

- American Journal of Science and Arts, November.
- Medical News and Library, November.
- Contributions to Terrestrial Magnetism, No. 7, by Lieutenant Colonel Gibson Sabine, R. A. For. Sec. R. S. etc.
- The Family Christian Almanac, for 1847.
- New York Journal of Medicine and the Collateral Sciences, November.

NOTICES TO CORRESPONDENTS.

Mr. Macdiernid's paper has been received, and will appear in the ensuing number.

Letters have been received from Dr. W. Hope, Belleville; Dr. C. W. Bowlnee, Penetanguishine; Dr. O. Newell, Dunham; Professor Robb, King's College, Frederickton, New Brunswick; Dr. R. Parmelee, Waterloo, C. E.; Dr. Cote, Montreal.

REPORT OF THE MONTREAL GENERAL HOSPITAL FOR SEPTEMBER AND OCTOBER, 1846.

Remained,	127	Discharged cured,	254
Admitted,	255	Irregular,	8
		Died,	14
Total treated,	382	Remaining,	106
		Total,	362
IN-DOOR PATIENTS.		OUT-DOOR PATIENTS.	
Belonging to Montreal,	140	Belonging to Montreal,	303
Immigrants,	88	Immigrants,	79
Seamen,	27	Seamen,	5
Total,	255	Total,	387
Males,	150	Males,	189
Females,	105	Females,	198
Total,	255	Total,	387

DISEASES AND ACCIDENTS.			
Abscessus,	3	Lumbago,	2
Ambustio,	6	Lapus,	1
Amaurosis,	1	Menigitis,	1
Amenorrhœa,	1	Menorrhagia,	1
Asthma,	2	Morbus Brightii,	2
Bronchitis,	7	“ Cordis,	1
Bubo,	2	“ Coxæ,	1
Cerebritis,	1	Mucous Pustules,	1
Conjunctivitis,	3	Necrosis,	1
Contusio,	13	Neuralgia,	1
Cystitis,	1	Œdema,	1
Cystirrhœa,	1	Ophthalmia,	1
Delirium Tremens,	7	Orchitis,	4
Debilitas,	1	Ovaritis,	1
Dislocation,	1	Papillary Syphilide,	1
Diarrhœa,	10	Paralysis,	2
Dysenteria,	1	Periostitis,	1
Dyspepsia,	1	Phthisis,	5
Emansio Menseine,	1	Pleurœpneumonia,	1
Eczema Impetiginodia,	1	Pleurodynia,	1
Elephantiasis,	1	Pneumonia,	2
Epilepsia,	7	Prurigo,	1
Febris Com. Cont.,	75	Psora,	2
“ Typhus,	10	Rheumatismus,	11
“ Intermittens,	2	Scarlatina,	2
Fractura,	4	Sciatica,	1
Furunculul,	1	Scirrhus,	1
Gonorrhœa,	1	Scrofula,	1
Hæmorrhœis,	2	Synovitis,	2
Hernia,	1	Syphilis,	13
Hepatitis,	1	Subluxatio,	2
Hysteria,	2	Tænia,	1
Icterus,	4	Ulcus,	7
Impetigo Scabidu,	1	Vertigo,	1
“ Sparsa,	1	Vulnus,	2
Iritis,	2		
Lepra Syphiliti,	1		
		Total,	255

ALEXANDER LONG, M.D., House Surgeon.

BILL OF MORTALITY for the CITY of MONTREAL, for the month ending OCTOBER 31, 1846.

DISEASES	Male.	Female.	Total.	Under 1.	1 & under 3	3 — 5	5 — 10	10 — 15	15 — 25	25 — 35	35 — 45	45 — 55	55 — 75	75 upwards
EPIDEMIC OR INFECTIOUS,.....	Small Pox,.....	2	2	1	1	1	1							
	Measles,.....	1	1	3	1									
	Fever,.....	8	7	15	3	2	1	1	1					
DISEASES OF BRAIN AND NERVOUS SYSTEM,.....	Convulsions,.....	1	1	1										
	Dentition,.....	4	3	7	4	3								
	Apoplexy,.....	2	1	3										
	Inflam. of Brain,...	3	3	3	2				1					
DISEASES OF RESPIRATORY ORGANS,...	Consumption,.....	14	13	27	3	3	1	1	3	4	2	2	6	2
	Croup,.....	1	2	3				1						
	Dilatation of Heart	1		1									1	
DISEASES OF ABDOMINAL VISCERA,	Diarrhœa,.....	3	2	5	2		1	1				1		
	Debility,.....	3	6	9									7	2
OTHER CAUSES AND DISEASES, AND DISEASES NOT SPECIALLY DESIGNATED,.....	Drowned,.....	2		2							2			
	Still-born,.....	4	1	5										
	Inflammation,.....	4	3	7		2	1	1		2		1		
	Scalded,.....	1	1	1							1			
	Intemperance,.....	1		1								1		
	Unknown,.....	1	1	2	1									1
Total,.....	55	40	95	17	13	4	5	4	8	8	8	9	12	2

MONTHLY METEOROLOGICAL REGISTER AT MONTREAL FOR OCTOBER 1846.

DAY.	THERMOMETER.				BAROMETER.				WINDS.			WEATHER.		
	7 A.M.	3 P.M.	10 P.M.	Mean.	7 A.M.	3 P.M.	10 P.M.	Mean	7 A.M.	Noon.	6 P.M.	7 A.M.	3 P.M.	10 P.M.
1,	+43	+18	+10	+15.	29.80	29.85	29.89	29.85	N. E. by E.	N. E.	N. E.	Rain	Cloudy	Rain
2,	" 40	" 43	" 38	" 41.5	29.85	29.89	29.99	29.91	N. E.	N. E.	N. E.	Rain	Rain	Rain
3,	" 39	" 54	" 42	" 46.5	30.07	30.03	30.05	30.05	N. W.	N. W.	N. W.	Fair	Fair	Fair
4,	" 38	" 55	" 46	" 46.5	30.07	30.00	29.98	30.02	N. W.	N. W.	N. W.	Fair	Fair	Rain
5,	" 47	" 65	" 54	" 56.	29.97	29.96	30.07	30.00	N. W.	N. W.	N. W.	Rain	Fair	Fair
6,	" 51	" 68	" 52	" 59.5	30.28	30.14	30.05	30.16	N. W. by W.	W. N. W.	W. N. W.	Fair	Fair	Fair
7,	" 52	" 74	" 63	" 63.	30.02	29.98	30.04	30.01	S. W.	W.	W.	Fair	Fair	Rain
8,	" 53	" 63	" 53	" 58.	30.30	30.34	30.26	30.30	W. by S.	W. by S.	W. by S.	Fair	Fair	Fair
9,	" 45	" 51	" 44	" 48.	30.08	30.07	30.25	30.13	S. S. W.	S. S. W.	S. W.	Fair	Fair	Fair
10,	" 37	" 54	" 38	" 45.5	30.43	30.42	30.47	30.44	W. N. W.	W. N. W.	W. N. W.	Fair	Fair	Fair
11,	" 32	" 53	" 44	" 42.5	30.50	30.40	30.30	30.40	N. W.	N. W.	N. W.	Fair	Fair	Fair
12,	" 39	" 63	" 54	" 51.5	30.17	29.97	29.93	30.02	W. by S.	W. by S.	W. by S.	Fair	Fair	Rain
13,	" 53	" 58	" 62	" 55.5	29.87	29.66	29.92	29.82	S. by W.	S. by W.	S. W.	Rain	Rain	Rain
14,	" 42	" 54	" 43	" 48.	29.70	29.77	29.74	29.74	W.	W.	W.	Fair	Fair	Fair
15,	" 40	" 48	" 41	" 44.	29.78	29.89	30.05	29.91	W.	S. W.	W.	Fair	Rain	Cloudy
16,	" 38	" 46	" 50	" 42.	30.10	29.85	29.76	29.91	S. S. W.	W.	W.	Cloudy	Rain	Rain
17,	" 36	" 40	" 34	" 38.	30.11	30.12	30.12	30.12	W. by N.	W. by N.	W.	Rain	Rain	Rain
18,	" 29	" 41	" 32	" 35.	30.05	30.00	30.04	30.03	N. E.	N. N. E.	N. N. E.	Fair	Fair	Fair
19,	" 25	" 43	" 34	" 31.	30.15	30.14	30.16	30.15	N. E.	S. W.	S. W.	Fair	Fair	Fair
20,	" 37	" 48	" 42	" 42.5	30.12	30.03	29.97	30.04	S. W.	S. W. by S.	S. S. W.	Fair	Fair	Fair
21,	" 38	" 44	" 43	" 41.	29.96	29.96	29.95	29.99	W.	W.	W.	Fair	Fair	Fair
22,	" 35	" 37	" 24	" 36.	29.95	29.78	30.00	29.91	W.	S. W. by W.	N. W.	Rain	Rain	Snow
23,	" 20	" 32	" 23	" 26.	30.03	29.92	29.72	29.89	N. W.	N. W.	N. W.	Fair	Snow	Snow
24,	" 29	" 37	" 30	" 33.	29.73	29.77	30.02	29.84	S. E.	W.	W.	Snow	Snow	Fair
25,	" 31	" 40	" 28	" 35.5	30.14	30.22	30.36	30.24	W.	W.	W.	Fair	Fair	Fair
26,	" 26	" 46	" 45	" 36.	30.38	30.08	29.88	30.11	S. W. by W.	S. W. by W.	S. by W.	Fair	Fair	Fair
27,	" 46	" 53	" 43	" 49.5	29.72	29.67	29.92	29.77	S. by W.	S. by W.	S. by W.	Rain	Rain	Fair
28,	" 31	" 35	" 33	" 33.	30.07	30.03	30.00	30.03	N. W.	N. W.	N. W.	Fair	Fair	Fair
29,	" 30	" 42	" 33	" 36.	30.00	30.01	30.13	30.05	N. W.	N. W.	N. W.	Fair	Fair	Cloudy
30,	" 28	" 38	" 27	" 33.	30.42	30.52	30.68	30.54	N. E.	N. E.	N. E.	Snow	Fair	Fair
31,	" 26	" 40	" 30	" 33.	30.77	30.74	30.72	30.74	E. N. E.	N. E. by E.	N. E.	Fair	Fair	Fair

THERM. } Max. Temp., +74° on the 7th.
 } Min. " +20° " 23d.
 Mean of the Month, +43° 5.

BAROMETER, } Maximum, 30.77 Inches on the 31st.
 } Minimum, 29.66 " " 13th.
 Mean of Month, 30.069 Inches.

