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[NEW SERIES.

ART. XLII.—*Two Cases of Successful Removal of the Upper Jaw on Account of Malignant Disease of the Antrum.*
By ROBERT L. MACDONNELL, M.D.,
late Lecturer on Clinical Medicine,
University of McGill College.

CASE I.—Mr. ———, aged 55, a farmer, residing in the Eastern Townships, consulted me in June, 1849, on account of a tumour which occupied the right cheek and extended into the nostril of the same side. He stated that about a year previous, he had received a blow on the cheek, which at the time caused but little annoyance, but that three months afterwards he began to suffer some pain in the seat of the injury, and he then noticed a small hard tumour, at first scarcely perceptible, but which soon increased in size and gradually acquired its present dimensions. Within the last few months, the tumour became larger and more painful, and extended into the right nostril, and frequent and profuse attacks of epistaxis quickly ensued. His general health began to fail, and he lost all hope of discussing the tumour by poultices and fomentations—the only treatment he had latterly employed. The Surgeon to whom he applied in the country, extracted a molar-tooth and explored the cavity of the antrum, but nothing except a few drops of blood escaped. When I saw him, the tumour was about the size of a hen egg, and projected from the canine fossa of the superior maxilla, to which it was firmly adherent. The skin covering it was tense and shining. The right nostril was blocked up by a fungous growth which

was hard and resisting, of a dark reddish colour, and exhibited a great tendency to bleed on being touched. A ridge like projection was likewise observed above the alveolar process of the same side, but no protrusion through the hard palate was noticed. The eye-ball was not displaced, and no impairment of vision had taken place. His general health appeared good, with the exception of the debility induced by the losses of blood from the nasal portion of the tumour. In consultation with Drs. Campbell, Howard, and Crawford, it was resolved to excise the superior maxilla, and accordingly the operation was performed on the 18th of June in the following manner:—

A short horizontal incision was made along the zygoma to the body of the malar bone, from which point the incision was now carried in a curvilinear manner to the angle of the mouth. The convexity of this incision was directed towards the ear. The flap was then dissected from off the tumour as far as the nose, and its external extent and that of the maxilla were thus fully exposed—a natural separation between the incisors rendered the extraction of one of them unnecessary. The alveolar process, hard palate and malar bone were divided by means of a small sharp forceps and the nasal process of the maxilla was divided with equal ease. An incision was made through the mucous membrane along the median line of the palate, and transversely, corresponding to the junction of the palate and maxillary bones, and with a slight

wrenching motion, the bone and the diseased mass were removed; a few touches of the knife liberated them from any soft adhesions that remained undivided.

The orbital portion of the maxilla was not removed, as it appeared quite healthy. The facial artery was the only vessel that required a ligature, and the amount of blood lost was very trifling.

The flap was laid down, and the edges of the wound brought together by twisted and interrupted sutures; the cavity in the mouth was filled with fine lint, and water dressing was applied externally.

July 21st. Some of the sutures and needles were removed, and the external wound was found to have united nearly throughout its whole extent, a small portion in its centre being still open. The patient was able to sit up, and walk about; no collapse having followed the operation.

For the next fortnight nothing worthy of notice occurred; and as he was very anxious to return home, he was allowed to do so, a small portion of the external wound remaining still open.

I heard from him several times after his departure from Montreal; in some of his letters, he complained of pain in the former situation of the tumour, and of a discharge of a sanious fluid from the nostril. Whilst preparing this for the press I have applied to his former medical attendant for more accurate information, but have not, as yet, received an answer to my inquiries. He was alive, however, twelve months after the operation, a fact clearly in favour of its performance, for there can be but little doubt that the frequent attacks of hæmorrhage would have carried him off in a few months, even if the disease

had not produced death by pressure on important parts.

CASE 2.—Joseph Wallace, aged 30, but looking much older, of a sallow complexion, tall and of thin spare habit, was admitted into the Montreal General Hospital, under my care, May 2d, 1850.—He stated that two years before, he noticed a small tumour, of a wart-like nature, growing from the hard palate, which, as soon as it had attained the size of a marble, remained stationary until five months before admission, when it began to spread over the palate so as to occupy nearly three-fourths of its extent. He also remarked, that a tumour had commenced to form on the left superior maxillary bone, and now for the first time, he suffered from deep-seated pain in the cheek. He applied to Dr. Lang, of the Medical Staff at Bytown, who made an exploratory puncture with a small trocar through the portion of the tumour presenting itself in the palate, but nothing (he says) escaped from the opening. Lunar caustic in substance and solution was frequently introduced through the opening, but produced no effect on the size or consistence of the tumour.

On admission, three-fourths of the palate were occupied by a hard tumour, covered by red mucous membrane; on the left side of the face, a large prominence was observed, which, when looked at sideways, nearly obscured the nose; it displaced the nasal bone which lay upon its surface, and extended to the edge of the orbit. A portion of the growth could be seen in the upper part of the left nostril, but no hæmorrhage had as yet proceeded from it, nor did he complain of pain when it was touched. The eyesight was not impaired. The articulation was very indistinct, and he had latterly experienced much difficulty in masticating and swallowing his food.

The removal of the bone, was performed on the 6th of May, in the following manner, in the presence of the Staff of the Hospital and several visitors. As the tumour encroached so much upon the nose, and had extended to the palate plate of the *opposite* maxilla, I considered it more prudent to make two incisions through the integuments as recommended by Liston, one externally (as in the first case) in a curved direction from the malar portion of the zygoma, to the angle of the mouth; the other in a perpendicular direction from the inner angle of the eye along the side of the nose as far as its ala; then, transversely along the upper portion of the lip as far as the median fissure, whence it was carried perpendicularly down through the whole thickness of the lip. The flap thus made, was dissected upwards, and the tumour and bone fully exposed. The infra-orbital nerve was divided, and the globe of the eye, and the inferior oblique muscle carefully dissected from the orbital plate. The mucous membrane was next divided, between the tumour and the alveolar process of the *right* maxilla, and a transverse incision was carried along the palato-maxillary articulation. The incisors having been removed before the operation was commenced, one blade of Liston's forceps was passed into the *right* nostril close to the septum, and the alveolar process and palate plate of the *right* maxillary bone were readily divided. The left malar bone and the nasal process of the left maxillary, were next cut through, and the tumour was thus detached, with the exception of a few adhesions of the soft parts which required the use of the knife.

In this case, chloroform was administered during the first stage of the operation, but the patient was allowed to recover from its effects, before the division of the bones was commenced.

The facial artery, was the only vessel that required tying, and very little blood was lost. The collapse which followed the operation was very great, and required for its treatment, a liberal administration of hot wine, and diffusible stimulants. The patient became moreover, extremely desponding, and from both these circumstances, the prognosis was very doubtful for the first forty-eight hours. On the third day, however, he rallied, and was able to permit the wounds to be dressed, which were found to have united by the first intention throughout their whole extent.

From this period, nothing important occurred. The cavity filled up rapidly with healthy granulations, and exhibited a marked tendency to contract. His articulation and power of deglutition were greatly improved, and his general health soon became re-established, and on June 5th, he left the hospital to return to his occupation, which was that of a farmer.

A short time ago, I addressed a note to Dr. Lang, to inquire about this patient, to which he politely sent me the following answer:—

BYTOWN, Dec. 16, 1850.

DEAR SIR,—I must apologize for delaying so long to answer your note; but I have been unable, until this morning, to obtain the intelligence you wished. The individual whose maxilla you removed, is now doing well and at his daily work. The report I have had is, that *the bone is meeting*. Of course you know what they mean by this. The operation has been perfectly successful.

On examination, both these tumours proved to be malignant—they both presented well marked examples of encephaloid cancer; and it is not a little curious, that seeing they resembled one another in their minute pathological characters, they should have differed so

widely in the symptoms accompanying each. In the first case, the growth was rapid and the nasal portion of the disease bled freely when touched, and from it, profuse hæmorrhages had spontaneously proceeded; whereas, in the second case, the tumour was slow in its growth, and even when punctured with a trocar, exhibited no tendency to hæmorrhage, nor did any fungus sprout from the opening thus made—consequences so frequent, that few surgeons like opening into, or otherwise meddling with, such growths. In fact, though the patient's countenance indicated malignant disease, I was in hopes, from the hardness of the tumour, its slow growth, its arising in the *palate plate first*, its indisposition to bleed, and its not having taken an excessive action, nor thrown out fungous growths, when punctured and injected with caustic, that it would prove to be non-malignant.

In the first case, it was my intention to have made two incisions of the cheek, as in the second instance; but at the suggestion of Dr. Campbell, I was induced to adopt the plan of the single curved incision, and found no difficulty in exposing the tumour and maxillary bone as far as its junction with the nasal bone.

Mr. Syme has claimed this curvilinear incision as an improvement of his own, in contra-distinction to the double incision recommended first by Mr. Liston, and subsequently by Fergisson and Miller.

In Mott's edition of Velpeau's *Operative Surgery*, it is stated that "Dr. Mott had, many years before that date, (i.e. the publication of Mr. Syme's paper in 1829) adopted the curved incision in question, in his exsections of both the upper and lower jaw bones: also Professor Velpeau was, we believe, anterior to Mr. Syme in this matter. It

is inexact, therefore, for Mr. Syme to assert that in operations either on the upper or lower jaw, it had hitherto always seemed necessary to make a double incision, so as to permit the formation of a flap exposing the fore part of the bone."—vol. ii. p. 733. From the above passage, it would appear that Professor Mott lays claim to the curved single incision recommended by Mr. Syme; yet in the same volume, at page 728, we find the following sentence in the comments on Dr. O'Shaughnessy's cases:—"In his operations on the upper jaw, we perceive that he disapproves of the extensive incisions of Mr. Liston; but nevertheless continues upon the erroneous plan, as Dr. Mott conceives it to be, of making his incision extend from the zygoma into the centre of the commissure of the mouth, *instead of the straight and single incision of Dr. Mott, from near the inner angle of the eye and along the ala of the nose into the mouth, near the median line of the upper lip.*" If this latter be Dr. Mott's method, it is certainly different from Mr. Syme's, and therefore his claim to priority cannot be admitted: nor can the claim set up by Mons. Velpeau be supported, for the first allusion to it is made in his letter to Dr. Mott, dated Paris, August 16, 1843, and published in Mott's edition of his work, in 1847; whereas, Professor Syme's paper appeared in *Cormack's Monthly Journal* in Feb. 1843.

The practical point deducible from the observations of these eminent surgeons is, that it is by no means necessary to make the double incision in *all* cases; and I have no doubt, that the practitioner will meet with some in which he will prefer the curvilinear incision—in others he will deem Mott's straight incision along the side of the nose, most advisable; whilst in a third

class, he will find it most convenient to adopt Liston's method.*

In the foregoing cases, the bones were easily divided by strong cutting pliers; and if the operator possess the requisite strength, he can in almost every instance, dispense with all other instruments for that purpose—for the section can be performed with comparatively such rapidity, that the sufferings of the patient are thereby much diminished, and the operation completed in much less time than by any other plan. The surgeon should furnish himself with pliers of different sizes; for the malar bone and the nasal process of the superior maxillary, can be cut through more conveniently with a small bone forceps than with that sold as "Liston's forceps."

POSTSCRIPT.—December 27th, 1850.

—Whilst correcting the press, I have received from Dr. S. McDonald an answer to my letter of inquiry. He states that the subject of my first case died on the 23rd of last October, one year and four months after the opera-

* In claiming the discovery of the above method, and dating its origin so far back as 1829, Mr. Syme seems to forget that in the last edition of his *System of Surgery*, published in February, 1842, exactly one year prior to the appearance of his second paper in *Cornac's Monthly Journal*, he himself recommended *exclusively* the two incisions. These are his directions for the first stage of the operation:—"In performing excision of the superior maxillary bone, two incisions should be made through the cheek, and extending from the inner angle of the eye directly downwards to the lip, the other beginning over the junction of the maxillary and malar bones and terminating at the angle of the mouth." p. 487. If Mr. Syme really considered his plan so great an improvement as he appears to do, in the papers published twelve months after the above sentence was sent before the profession, he must have acquired his experience of its merits in the interval between Feb. 1842 and Feb. 1843.

tion. A morbid growth commenced to form on the same side of the face in the month of July and rapidly increased, and gave rise to profuse discharges of pus, also to slight arterial hæmorrhages.

Montreal, Dec 26, 1850.

ART. XLIII.—*Electro-Biology Successfully applied to Surgery.* By Wm. MARSDEN, M.D., Quebec.

Having recently had frequent opportunities of witnessing the mysterious, incomprehensible, and inexplicable influences—and almost magical powers—of Electro-Biology; and having learned the mode of its application, I have for some time past been engaged in practising such experiments as I thought would enable me to make a *useful* application of its mighty and wonderful influences. Finding that it gave me most unlimited controul over the physical as well as mental power of my subject, the enquiry that forced itself naturally upon my mind was, *cui bono?*—and the equally prompt and natural reply was, every good;—since, if we can make a person under its impression deaf, or blind, or dumb, or lame, or sad, or merry, or drunk, or sober, or cold, or hot, or wet, or dry, or sore, or whole, or sick, or well, or in fact any thing we please, we may apply it to the operations of surgery; and keeping this object in view, I resolved on the first favourable opportunity to test its usefulness.

I will not digress at present to relate any of the many singular feats that have been performed under its influence, and with which most of your readers on this side of the Atlantic must be familiar; although I find it has taken no root on the other side of the water yet, not having found favour in the eyes of the British public; but will confine my remarks to one single case.—

William Corrigan, farmer, of Valcartier, ætatis 55, called on me on the 11th instant with a letter of introduction from his clergyman, begging of me, as a personal favour, to "examine his case, and tell him exactly (to use his own words) what he had better do." I found him labouring under an osteosarcomatous tumour which occupied a large portion of the right side and base of the inferior maxillary bone. A part of the lower lip was wanting, a large portion of the orbicularis oris having been destroyed, some time previously, by a quack, from the application of plasters for the cure of cancer, leaving an unseemly gap and cicatrix. He stated that the tumour was of recent growth (being only of eight or ten weeks standing at most,) and was rapidly increasing. I therefore informed him, that I feared the removal of the diseased part by the knife was inevitable, at which he expressed great fear and apprehension, stating his fears that he should either die under the operation, or be unable to bear it, and expressed a wish to try the effects of some remedial means. I therefore advised him not to be bound by any solitary opinion, but to consult other medical gentlemen, and recommended his calling on Drs. Douglas and Blanchet, to whom I offered him an introduction, whereupon he said, "I will tell you the truth Sir:—I went to Dr. Douglas a few days since, and he told me the same as you do, and told me to come back soon to have the operation performed, but I am afraid of it, I am afraid I cannot bear it, &c." Having called on Dr. Blanchet, he again saw Dr. Douglas, who stated that the growth of the tumour had been very rapid since he had last seen it, (only about ten days before) having nearly doubled its growth, which the patient himself admitted; and he consented to the performance of the

operation on the following day, on being assured that no danger would attend it. I now informed him, that as his dread of the operation was so great, I would place him under an influence* without medicine, and without depriving him either of sense or consciousness of what was doing, by which he would feel no pain during the operation, and desired him to come to me in the morning that I might impress him before-hand. He did so, and in a very short space of time, I had impressed him so completely as to controul sight, muscular motion, and feeling. I desired him to return on the following morning early—the 12th instant—as the operation was fixed for eleven o'clock. He did not however return until past ten, A.M., when I again impressed him with the additional result of controuling taste as well as the senses, and completely destroying sensation in *any isolated portion* of the body. I now *knew* that I had obtained my object, and immediately proceeded to inform Dr.

* He had never heard any thing about Biology, and could not, therefore, be influenced mentally from any thing he had seen or heard. Dr. Douglas expressed his astonishment and satisfaction at the result of the operation, and informed me that Corrigan had called on him on the morning before the operation to ask his opinion of Electro-Biology, and that he had told him, what he fully believed, that it could be of no use, as he had seen its seventh cousin—mesmerism—tried without the least positive or decided effect; but that if Dr. Marsden thought it would do any good let him try it, as if it did no good it would do no harm, but he was sure it could not destroy pain.—Now, seeing that the patient had the most unbounded confidence in Dr. Douglas, the result obtained is the more satisfactory, as Corrigan was actually impressed against his conviction, and with a feeling that it would fail; in addition to which, no one present but myself anticipated success. So confident, however, was I in the power I possessed, that I actually wrote and sent an answer to the Priest's letter on the 11th instant, informing him what I was *going to do*.

Douglas of the success of my experiment, who received the intelligence with about as much apparent credit as if I had applied for admission as an inmate of the Lunatic Asylum—merely saying, “very well I will be down directly.”

At the appointed hour Dr. Douglas arrived, accompanied by two medical gentlemen and a student or two; and the patient, with some of his friends and acquaintances, proceeded to the operating-room under the biological influence.—Being placed in position, I gave him a galvanic disc to hold in his right hand during the operation, and placed myself in a situation to command his eye without interfering with the operator; and having by a series of passes destroyed sensation in the head and face, I desired him to keep his eye steadily upon mine, paying no attention to the operator or his assistants, and that he would feel no pain, although he would know what was going on about him—when Dr. Douglas commenced by extracting the right inferior cuspid tooth, which seemed to produce no sensation whatever, I continuing the whole time of the operation to command his eye, talking to him and making biological passes. The operator then made an incision through the integuments, muscular fibres, &c., obliquely downwards, commencing at the junction of the second left inferior incisor and cuspid tooth, and continuing it inwards, towards the right side and about an inch below the base of the inferior maxillary bone, and extending backwards to the posterior inferior angle of the same bone, and then dissected back the flap, exposing the whole external surface of the bone. He next sawed through the maxillary bone anteriorly at the alveolar process of the extracted tooth, and posteriorly through the root of the condyloid and coronoid processes of the same side, nearly per-

pendicularly through the inferior posterior angle of the jaw, and then dissected out the attached and diseased portion of bone, tying two vessels. The flap was then brought down and secured by fine pins and twisted sutures.

The operation having been completed with Dr. Douglas' usual skill and dexterity, the patient was told that it was finished, and asked if he had felt any pain; he replied “no! I felt you drawing the tooth a little, but it did not pain me, and I knew all you were doing. I knew you were sawing the bone; I heard and felt the saw, but *I felt no pain at all*; and I knew all you said and did.” On Dr. Douglas ordering him to be carried up to bed, he started briskly out of his chair (being still impressed), and full of excitement exclaimed, “I want no one to carry me; I can carry myself; I can walk as well as you can;”—and following him to his room I proceeded to *de-biologise* him. And having done so he said:—“Ah! I feel it now; I feel a smarting.” This was the first expression or indication of sensation from the time he left his bed-room for the operating-room until now. A remarkable feature of this operation, in addition to being *painless*, was that it was also almost *bloodless*; the total amount of the circulating fluid lost being probably not more than an ounce, the division of the facial or labial artery being followed by a mere jet a few inches—not feet—high, which with a smaller branch were at once readily controuled.† The patient having been placed in bed, we left him; but in little more than half-an-hour we were summoned in haste to him, by a messenger, stating that the wound had commenced bleeding afresh. Both Dr.

† The effect of Electro-Biology is evidently to diminish the circulation in the part influenced, as the pulse did not indicate any sinking to account for the want of hæmorrhage during the operation.

D. and myself were promptly on the spot, and found pretty copious hæmorrhage taking place both from the mouth and external wound. The sutures were removed, and re-action having freely set in, three additional ligatures were necessarily applied, and the hæmorrhage arrested. He complained of pain on applying the ligatures now, as we had not deemed it desirable to put him under the biological influence again, as it had decidedly the power of arresting the circulation in the part, and would again be followed by re-action. The case has gone on steadily mending without a single untoward symptom—the action being perfectly healthy—no medicine having been needed or given, excepting a dose of sulphate of magnesia on the morning of the 14th instant. He is, in fact, so well that the pins are to be removed from the lip in the morning, when he will return to his home.

Quebec, 16th Dec., 1850.

ART. XLIV.—*Case of Traumatic Cataract.*—By HENRY HOWARD, M.R.C.S.L., Surgeon to the Montreal Eye and Ear Institution.

On the 1st of March, 1850, Mrs. ———, a widow, presented her son, aged 12 years, at the Montreal Eye and Ear Institution to obtain relief for his right eye, which he stated had been injured from the blow of a top four days previously, since which time he had lost the sight of the eye, and suffered much pain.

On examining the eye, I found a perpendicular rupture through the whole extent of the cornea, the wound being a little internal to the axis of vision. This wound had partially cicatrised, but there was sufficient of it open, in the most depending part, to allow a constant trickling away of the aqueous hu-

mour. The wound appeared double the width it really was, owing to a great quantity of effused lymph along its edges at both sides. In the centre of the wound a small portion of the pupillary edge of the iris, at its internal and inferior angle, was strangulated; but this portion of iris was not protruded through the wound, so as to appear on the convex surface of the cornea; on the contrary the wound had been perfectly cicatrised, and the piece of iris was grasped by its internal edge. The remaining anterior surface of the iris was not in actual contact with the concave surface of the cornea, as there was a sufficient quantity of the aqueous humour present to prevent the anterior chamber of the eye from being completely obliterated. This, however, was not the case with the posterior chamber, for the capsule of the lens was in actual contact with the posterior surface of the iris; and although I could observe no wound in the lens, or its capsule, yet there was perfect opacity of both; in other words, there was *Traumatic Capsulo-lenticular Cataract*. The boy was suffering much from deep-seated and circum-orbital pain. There was great vascularity, profuse lachrymation, and intolerance of light. The conjunctiva, scleroticæ, cornea, and iris partook of the inflammation. The pupil did not obey the stimulus of light. My prognosis in this case was given with great caution. I told his mother that if I succeeded in removing the inflammation and preventing the whole eye from becoming disorganised, that an operation, even then, might become necessary.

The treatment I adopted was to smear belladonna in the usual manner around the orbit, ordering it to be kept moist. I also ordered the boy to be put to bed, kept quiet, and as much as possible

upon his back, and to have a pledget of lint wet with cold water laid upon his eye-lids. My object in having him kept upon his back was to prevent, as much as possible, the escape of the aqueous humour, and give that part of the wound of the cornea, through which it was trickling, the best possible chance of healing. This treatment was continued for two days, during which time his bowels had been kept moderately loose with saline purgatives, and nausea maintained by minute doses of tartar-emetic. On the third morning I examined the eye again, and found that the wound in the cornea was perfectly healed, the chambers of the eye filled with aqueous humour, and the general inflammation much abated; but I found three distinct bands of lymph reaching from the pupillary edge of the iris across the anterior chamber of the eye to the wound in the cornea. I also observed bands of lymph between the posterior surface of the iris and the capsule of the lens. The appearance now presented by the strangulated portion of the iris, in consequence of the chambers of the eye being distended with the aqueous humour, was as if a black thread traversed the anterior chamber of the eye, reaching from the internal and inferior angle of the pupillary edge of the iris to the cicatrix in the cornea, a little inferior to its centre. The shape of this band was that of two triangles, their apices meeting in the centre of the anterior chamber of the eye, the base of one triangle at the cornea, and that of the other at the iris.

My object now was to get the boy as quickly as possible under the influence of mercury. I discontinued the purgatives and tartar emetic, and gave him one grain doses of calomel every eight hours, keeping at the same time the belladonna smeared round the orbit.

After having taken nine grains, I could perceive the mercurial fœtor on his breath; the inflammation of the eye was then much diminished, but none of the lymph was absorbed. For a fortnight from this I made him attend me every morning, when I dropped upon the conjunctiva a large drop of the four grain solution of atropine, making him take every night during that time half a grain of calomel, and continuing belladonna round the orbit. At the end of this time the inflammation had disappeared, and the bands of lymph in the anterior chamber of the eye were all absorbed; the cicatrix in the cornea was strong, and the lymph which was along its edge had all disappeared. But still there was the cataract; and the adhesions which had taken place between the capsule of the lens and iris yet remained. Still continuing daily the use of the atropine and belladonna, and substituting for the calomel the ioduretted iodide of potassium, in the course of a fortnight the boy presented himself declaring that he could see much better; and on examining the eye I found the pupil well dilated, with the exception of that part which was strangulated in the cornea; the adhesions had not given way, but the capsule of the lens was lacerated, and the lens itself lying in its natural position exposed to the action of the aqueous humour. My treatment was continued, his sight daily improved, gradual absorption of the lens went on, although no portion of it was displaced; and in five weeks from the day the capsule was torn, not a particle of lens was discernable, and the boy's sight was perfectly restored, with the exception, that when he looked towards his nose, he said that "something like a hair went across his sight." I had some intention of putting in a sharp edged cataract

needle, and dividing the band of iris which traversed the anterior chamber of the eye, but both patient and parent objected to it; and I confess I did not urge it, as I thought in this instance the old adage stood good of "letting well enough alone."

This I consider an interesting case in many particulars; but that which presents most interest is the fact of an absorption of the lens, without its having been either displaced or broken up, the laceration of the capsule having exposed it to the action of the aqueous humour. Dr. Jacob has already furnished strong proof, that cataracts exposed to the agency of the aqueous humour can be removed by absorption; and the case, just given, goes far to establish the truth of his proposition.

Montreal Dec., 1850

ART. XLV.—*Additional remarks on the Endemic Fever of Upper Canada, by JOHN JARRON, Surgeon, Dunnville.*

The term "chill fever" is now commonly employed to designate a form of the endemic, evidently belonging to the congestive variety. In it, the first stage is imperfect, scarcely ever amounting to a rigor—only a cold chill of greater or less severity or duration; the second and third stages are usually more decided, but far from being perfect; the modifying cause of the first evidently affecting the subsequent ones. The same features will characterize the subsequent agues, producing many of those cases to which the term dumb ague will apply.

In chill fevers, we have always great prostration of strength, muddling of the brain, and other congestive symptoms; the fever being seldom ardent, or accompanied by a dry, red, and contracted tongue; indeed, this is generally enlarged, soft and milky; and, in some cases, covered up to the tip and edges with a thick, white, soft, crust; the bowels seldom costive, but the stools more than usually altered and offensive.

The skin, rarely puts on the dark brown hue of common fever; but the countenance and whole body, assumes a dirty yellow color, and a soft, transparent, marbly, appearance. In some of the cases, the third or sweating stage will become more than usually prominent; the patient lying bathed in sweat, emitting the usual agueish smell for days together; a state often accompanied by pains and swellings of the joints, and other symptoms of rheumatism.

The recurrence of the fits of these fevers is marked by a state almost approaching collapse; the arms and legs being cold, and of a peculiar, marbly, appearance; which will be separated from the warmer parts by a distinct line; the pulse at such times being sunken and small, often scarcely to be felt; but this state will disappear after a time, passing into a paroxysm of the usual irregular fever.

The cause of this peculiar form of fever is not very obvious. And I had been several years in the country before it attracted my attention; but, it gradually became more general, and, since the cholera has re-appeared on this continent and been prevailing within a short distance of this place, a majority of the fevers are of this variety, exhibiting in many instances, the most alarming symptoms. The same state of collapse, cold extremities and sinking, frequently accompany the bowel complaints that have increased so materially at certain seasons of the year; and when the diarrhœa is checked, a fever of this class will continue for days, requiring large doses of quinine for its removal; but, again showing itself in the winter in the form of an occasional ague.

In our endemic, the tongue will frequently be found exhibiting an appearance common to every form of congestive disease. It is seldom noticed by authors; but in India, used to be characterized as the "patchy tongue"; sometimes, as the "irritable tongue", from its so frequently accompanying that state of the pulse and constitution in the latter

stages of fever. It is here to be seen, both when the tongue is hard, dry, black and crusted; and when it is enlarged, moist and thickly coated. The covering may at first be complete, but, it will disappear by patches; sometimes from one or both sides; sometimes from the middle, or in streaks; exhibiting patches on its surface of various shapes and sizes. I have seen families suffering from a congestive form of fever or ague, in almost every one of whom, these patches would be apparent.

I have lately noticed the tongue frequently exhibiting a number of red points—very bright—smooth on the surface, and from a line to a line and a half in diameter. They are not enlarged papillæ; as a magnifying glass shows these throwing out their secretions between the others. They are most numerous along the edges; and in enlarged, moist, and thickly coated tongues, they look like red points sunken in the crust.

I have now and then met with cases in which the ferretty eyes and drunken reel of pure typhus, were very manifest. They usually ushered in a severe and protracted fever; but an active treatment at the commencement would occasionally stop them in limine, the patients being however, left subject to the usual attacks of ague.

A disease exhibiting the general character of this fever, even in its mildest form, and being so protracted as it usually is, may be expected to show considerable variety in its chronic stages—to be a cause of the diseases usually following fevers and biliary derangements in any climate—as well as to modify attacks of active inflammations when they do appear in individuals, who may be suffering from the constitutional effects of the climate.

The symptoms attending a case of recovering ague, are exceedingly uniform; yet, we now and then meet with peculiar aggravations demanding a slight notice.

The pains in the limbs and back may be more than usually severe and protracted; sometimes assuming a rheu-

matic character. Those in the back and loins, may even give rise to a suspicion of disease of the kidneys and bladder; but, I have rarely seen such a case. They may be confined to the lumbar vertebræ and coccyx, at its very extremity, and give rise to a state of perfect torture—confining a patient to bed for weeks, his only relief being obtained by large doses of opium.

This state is generally connected with a congestive form of fever; some of the worst attacks being silenced cases in which, the orange coloured discharges from the bowels had occurred.

Pains of the neuralgic character will now and then be found in the lower extremities, no marks of inflammation being present; the slightest touch will sometimes excite extreme pain, resembling that of *tic douloureux*. They will, however, sometimes terminate in inflammation and swelling, exceedingly difficult to be got rid of.

A short, robust man, lately applied to me on account of an attack of this kind of pain. It was confined to a joint in the hollow of the foot, at the juncture of the metatarsal bone of the great toe with the tarsus. It had continued for weeks, unmitigated by local remedies. There was no appearance of inflammation; but, the pressure of the fore-finger would bring on a paroxysm of pain. He could not remain quiet, even when describing his own case; and his countenance showed traces of the extreme agony he was suffering. He was employed in charge of a boat on the river and canal; had not suffered from the ague for years; his appetite and general health were good, though his tongue showed the ageish whiteness, and the lines of his face a good deal of the dark yellow colour. He was directed to bathe his foot in hot water; to take a large dose of calomel, gamboge and scammony; and to call again next morning. His boat was obliged to leave during the night, and I saw nothing of him for ten days, when I learned that the medicine had operated very severely, and immediately removed the pain, and he had

only "slight twinges" since. He was directed to take occasional purgatives of the same kind; and when last seen, had felt no return of pain.

The symptoms of existing derangement of the stomach and *primæ viæ* are exceedingly various, many of them giving rise to suspicion of serious organic disease, which, the history of the cases, and their speedy removal by appropriate remedies, will only dissipate. Sometimes the pain in the region of the stomach is excessive, stretching across the margins of the ribs and back, as if arising from spasm or some temporary affection of the diaphragm. With these, the symptoms of ague are often obscure; but the fits are usually preceded or attended by yawning and stretching, and followed by agueish perspiration; and patients soon become aware of the cause of their sufferings. Cases of European dyspepsy I have scarcely ever seen in this country.

Chorea will occasionally show itself in the protracted cases of young people.

A most excruciating tooth-ache and pains of the bones of the face, often extending to the ears, are exceedingly common; and with many, after exposure to cold or wet, become the first notice of an approaching fit of the ague.

The effects of malaria on the uterine system are very apparent

We find cases of chlorosis modified by the agueish state of the *primæ viæ*, and many of its usual symptoms increased and attended by frequently recurring paroxysms of fever; the secretions being excessively depraved, and requiring active treatment to prevent the occurrence of dropsy.

In married females who have suffered much from fever or biliary derangement, the menses will often become more frequent than usual, the discharge increased in quantity; and, in some cases, this may run on to a constant drain of blood from the uterus for months together. The uterus will then be found rather large, the os thick, softened and flabby; but organic disease or serious inflammation seldom or never ensues; and with

the improved state of the general health, the organ will resume its tone and healthy action as if no such state had ever existed.

Another state of the same general discharge has lately become exceedingly frequent, sometimes, almost epidemic in this neighborhood. It is ushered in by much general uneasiness, pains in the back and legs, similar to those at the commencement of an ulceration; these extend to the uterus, when a discharge of blood will commence, and frequently continue for many days. The blood seldom escapes in gushes, but generally in clots; some of them large, hard, and apparently organised, with a white fibrinous matter in the centre. The discharge is always of a dark colour, and so offensive as often to excite uneasiness in cases where the other symptoms may have been overlooked.

The action of the uterus is often excessive, and the pain severe; just as if a large ovum was about to be thrown off. The body of the uterus will be found enlarged and tender; the os open, soft, and exceedingly sensitive to the touch; and I have now and then found inflammation of an erysipelatous character attack the lining membrane of the vagina and vulva.

I have met with the affection in different states of the uterus;—in females whose menses had previously been regular; in others who were nursing at the time; in cases where conception had taken place two or three months previously, in which the ovum would be thrown off, and the peculiar discharge continue for some time after; also in the puerperal state, where the lochia had disappeared for days; and this discharge would either accompany or follow an attack of fever.

These cases are always accompanied by a state of fever, accidentally of the paroxysmal character, and often rather severe; agueish appearance prominent, and the secretions from the bowels excessively offensive; so much so as often to excite, in patients, an alarm of internal mortification as the cause of such

discharges as were taking place from the uterus and bowels. The loss of blood frequently brings on a state of great exhaustion; seldom syncope of the character observed in uterine hæmorrhage, but rather resembling collapse, or something between the two.

The usual remedies for uterine hæmorrhage will be of little avail in these cases. The state of the secretions and fever urgently demand repeated doses of calomel, opium, and ipecacuanha, followed by purgatives; and so soon as the former begin to improve, and the latter to subside, quinine and iron must be freely administered.

The same state of the uterus will be apt to recur with a fresh attack of fever; and to keep this off, the state of the bowels must be strictly attended to.

I have never found the affection followed by organic disease, or any material change in the functions of the uterus.

(To be continued.)

PRACTICE OF MEDICINE.

Conclusions respecting the Seat and Nature of Angina Pectoris. By Dr. KNEELAND, U. S.—Dr. Kneeland draws the following conclusions from his researches into the nature and causes of angina pectoris:

1. From the symptoms and morbid appearances, angina pectoris is not a disease of the lungs, heart and its vessels, or stomach, but an affection of the nerves supplying these organs.

2. Anatomy, physiology and pathology would lead us to place the seat of angina pectoris in the par vagum, and not in the sympathetic system of nerves.

3. Like other nerves, the par vagum may be affected with neuralgia or rheumatism; with inflammation; it may be compressed by morbid growths; its spinal origin may be compromised by hæmorrhage, accidental wounds, and various irritations—all of which may cause the symptoms of angina pectoris.

4. Angina pectoris and asthma are intimately related; the former being an affection more especially of the sensitive filaments of the par vagum; and the latter an affection of its motor filaments

Both are generally more or less combined in the same case.

5. Angina pectoris is a disease not necessarily fatal, especially in young persons, if accurately diagnosed, and properly treated.

6. In addition to the remedies of the books, special attention should be given to the inhalation of oxygen, and to the use of electricity.

7. In cases of angina pectoris, attention should be directed to the examination of the par vagum, from its origin to its terminations, which, doubtless, on careful examination, will exhibit lesions sufficient to account for a fatal result.—*Amer. Journal of Med. Science.*

On the Relations Between Epilepsy and Puerperal Convulsions. By Dr. TYLER SMITH.—Obstetric authors, when treating of puerperal convulsions, very commonly speak of it as puerperal epilepsy, or they divide puerperal convulsions into the hysterical, apoplectic, and epileptic varieties. The application of the terms epilepsy and epileptic to the convulsion of the puerperal state, shows that these maladies have been thought related to, or closely resembling, each other; and I believe, from my own experience, many persons believe in the existence of some actual connexion between them, and that epileptics are more prone than other women to puerperal attacks. It is this supposed connexion that I wish to examine in the present memoir.

Dr. Robert Lee, in his learned and comprehensive "Lectures on Midwifery," observes:—"Those women are most predisposed to the disease (puerperal convulsions) who have had hysteria or epilepsy in early life, who have suffered from injuries of the head, or who have had violent attacks of fever, with severe affection of the brain."

Drs. Hardy and McClintock, in their excellent "Practical Observations on Midwifery," express a different opinion. They say:—"It does not appear that females who are subject to epileptic fits are more liable, on that account, to attacks of puerperal convulsions. On the contrary, it would seem that they enjoy an exemption, and that even the epileptic attacks occur with less frequency, and with unmitigated severity, during pregnancy. This certainly was the case in

three or four cases of pregnant epileptic females who came under our notice." I believe I am right in referring this passage to Dr. McClintock, and I shall hereafter have the pleasure of quoting his cases, with the notes of which he has kindly supplied me.

In his essay "On the Theory of Convulsive Diseases in Adults," Dr. Marshall Hall observes, respecting puerperal convulsion:—"There are many and most important questions to be solved in regard to this and many other forms of convulsion. Does it lead to subsequent attacks of epilepsy? Do previous attacks of epilepsy predispose to puerperal convulsion? In this latter is there sphagismus, laryngismus, or odaxismus! What relation is there between puerperal convulsion and puerperal mania; and between convulsion or epilepsy, and mania or insanity, and paralysis in general?" Thus, the relations between epilepsy and convulsions are involved in considerable obscurity, and I do not know that any collection of cases has ever been made to determine the point upon which such a difference of opinion exists.

The two diseases, epilepsy and puerperal convulsions, are so alike in their general features, that any one reasoning *a priori* would be apt to say that epileptics must necessarily be prone to the convulsions of the puerperal state, particularly when the excited condition in which the entire nervous system is brought by gestation and parturition is considered. But, upon reflection, it would become evident, that were this the case, few married epileptics could survive the repeated shocks of the puerperal seizures during the era of child-bearing. There are, too, certain points of difference between epilepsy and puerperal convulsion, both in the attacks themselves and in their antecedents and results, which, upon examination, go far to establish the distinctness of the two diseases.

Epilepsy is generally a chronic, puerperal convulsion, always an acute disease. Epilepsy is generally preceded by the characteristic aura; this is never present in puerperal convulsion. Puerperal convulsion is generally preceded by œdema of the extremities—a thing rarely observed in epilepsy. Epilepsy, when long continued, often leads to

idiotcy or weakness of the intellect, with occasional paroxysms of insanity. Puerperal convulsion, when it affects the intellect, produces acute mania. The fits in puerperal convulsion are much more severe, and asphyxia is more nearly approached. The fits are many in number, following each other in rapid succession, and there generally is insensibility in the intervals; while in epilepsy the disease recurs by fits of one or two at a time, often at long intervals, with the speedy recovery of consciousness after the subsidence of the convulsion. Puerperal convulsion is a disease of days, or even hours! Epilepsy is a disease of years! It is seldom that epilepsy terminates fatally until the nervous system of the patient has been worn out by repeated seizures, while in the puerperal disorder the first attack may kill. Epilepsy is connected with the ordinary functions of the body, occurring at the most varying times, and from the most varying causes, while puerperal convulsion belongs to an extraordinary function, of limited duration. And after asking the question—Is epilepsy followed by puerperal convulsion? another question is suggested—Are the subjects of puerperal convulsion predisposed to attacks of epilepsy? If we examine into actual cases we shall find the facts to be, that existence of epilepsy is by no means necessarily followed by puerperal convulsion on the occurrence of gestation and parturition; and it would be difficult to prove that there is, in epileptics, even a greater predisposition than usual to the puerperal attack. In epilepsy, too, the exciting cause is generally eccentric, as, for instance, some irritation of the stomach, bowels, ovaria, &c. The circulating mass is not vitiated as far as its examination has yet gone. In puerperal attacks there are unmistakable indications of toxæmia, blood-poisoning, or centric irritation of the spinal marrow, the organ upon which all convulsive actions depend. The treatment required in the two diseases is very dissimilar; in the one, the time for the treatment is in the intervals between the fits; in the other, it is in the fits themselves. We should as seldom bleed in epilepsy as we should omit to do so in puerperal convulsion. [In a further communication the author substantiates the above views.]

—*Lancet.*

Extracts from a Lecture on Medicated Soaps.—By SIR HENRY MARSH, Bart.

—Now gentlemen, before we conclude, I shall add a word or two about the medicated soaps which I have shown you, and to which I have already made allusion. The thought struck me early one morning, as I laid in bed pondering over a case of psoriasis which very much interested me, that various medicaments might advantageously be applied to diseased skin through the medium of soaps. It occurred to me, that during the application the morbid cuticle would be detached, and the unprotected surface exposed to the direct action of the remedy, whatever it may be, with which the soap is incorporated. Besides, I thought this saponaceous application might be employed co-efficiently with other local remedies, and render them, by thoroughly cleansing the surface, more rapidly curative. Such were the advantages which, from the application of variously medicated soaps, I anticipated. With this idea full in my mind, I happened that day to meet Mr. Moore of South Anne-street. I stated to him my views; he told me he had prepared camphor soaps, and that very evening, before the sun went down, he prepared for me the following soaps. The prompt and satisfactory manner in which this was done for me was very gratifying. I shall give you his list, and the method of preparing them. I hope they will find a place in the forthcoming Pharmacopœia, for I really do think, after the experience and observation of a year, that they deserve to be enrolled amongst the long list of our pharmaceutical preparations:—

Sulphur Soap.—Take of white Windsor soap two ounces, spirits of wine, coloured with alkanet root, one fluid drachm. Pound the soap well in a marble mortar, so as effectually to get rid of all the lumps; add the spirit, and beat into a uniform paste; then add sublimed sulphur two drachms, otto of roses ten drops. Beat all well together.

Red Precipitate Soap.—Take of white Windsor soap two ounces, rectified spirit of wine one fluid drachm. Pound the soap well in a marble mortar until all lumps have disappeared; add the spirit, and beat into a uniform paste; then add precipitated red oxide of mercury one

drachm, otto of roses six drops, beat all well together.

Corrosive Sublimate Soap.—Take of white Windsor soap two ounces, spirit of wine one fluid drachm, corrosive sublimate one scruple, pound the soap well in a marble mortar until all lumps have disappeared; add the corrosive sublimate, previously reduced to a fine powder and rubbed in a separate mortar, with the spirit. Beat all into a uniform paste adding six drops of otto of roses.—

Now, the only forms of cutaneous disease that admit of the application of these soaps are those which either have passed from the acute into the chronic stage, or have not been at any period peculiarly irritable and tender; at the same time, however, I have met with several cases in which the tender surfaces, at first intolerant, became subsequently inured to them; and after a little perseverance the patients began to speak highly of their soothing and beneficial effects. Thus it sometimes happens, that an acquaintance at first repulsive is, by frequent and familiar intercourse, metamorphosed into a valued friend.—The soaps which I have most frequently employed, and noted the effects of, are the *sapo sulphuris* and the *sapo hydrarg. præcip. albi*. The diseases for which I have prescribed them with advantage are those various forms of lepra and psoriasis, in which the irritability of the diseased skin was not so great as to forbid their application. I have, also, found them particularly efficacious in cases of prurigo pudendi and prurigo ani. In these most obstinate and maddening affections, their reiterated and abundant application has been followed by a marked alleviation of the dreadful itching, and in some cases they have effected a perfect cure. Persons afflicted with *sycosis menti* have told me that though they had in vain attempted to shave with these soaps, yet they have, from their application, derived the greatest advantage. Shaving, in any way, is, in severe cases, a most painful, sometimes an impracticable, operation. In such it is far preferable to cut the beard with scissors.—Probably the ingredients of some of the soaps would injure the edge of a razor. The application of the soaps should be independently of shaving, and when used assiduously and perseveringly they furnish us with a valuable adjunct in the

treatment of this most troublesome affection. The reports of the patients who are, or who have been, using them, and my own observations do, I think, quite warrant my recommendation. The sulphur soap supplies a cleanly method of curing itch, at least in its milder forms; when inveterate, still more energetic remedies must be applied; but even in those instances I have found the soap greatly to expedite the cure. They can be used with peculiarly good effect whilst the patient is in a warm bath; this may be done by means of a sponge or soft brush, or by direct friction with the soap itself. From this mode of application I have known very satisfactory results to ensue. These soaps, then, whilst they do not supersede other remedies, by their immediate agency on the denuded morbid surfaces or patches, materially promote the cure. In some of the more arid and less irritable forms of tinea capitis, I have seen marked benefit to result from the action of these soaps upon the diseased skin. At first I thought my idea an original one; I have since learned that medicated soaps are included in the continental pharmacopœias. This I ascertained from Dr. Apjohn. I find that sulphur soap was introduced many years ago by Joseph Frank. Whether the idea be old or new is of little moment provided the soaps be useful: useful I think they are.—*Dublin Medical Press.*

On the Detection of Oxalate of Lime in the Urine. By Dr. H. BENCE JONES, F.R.S.—Oxalate of lime is so frequently found in the urine of those who are in a good state of health, that I do not consider it as indicating any disease, but only a disorder of no serious importance. It scarcely indicates a more serious derangement of the general health than a deposit of urate of ammonia does. It may occasionally be found in the urine of all who lead sedentary lives, taking insufficient air and exercise, and more food than is requisite for the daily wants of the system. I have found it in the urine of those who are free from every complaint. Even in the urine of healthy children it may very frequently be seen. I have met with it in every kind and stage of disease. In the fracture wards of St. George's Hospital I have frequently found it. The

most severe case I ever saw, was an artist, aged 30, dying of abdominal aneurism. In cases of indigestion, especially when flatulency occurs; in cases where no indigestion ever was felt; in skin diseases; in cases where the skin never was affected; in cases of acute rheumatism, of acute gout; of fever; in sciatica, in a gentleman of 74, with spermatorrhœa: and in the diseases of women and children, octohedral crystals occur. So frequently is oxalate of lime mixed with urate of ammonia in sediments and calculi, that I have returned to the conclusions which Dr. Prout originally published in the second edition of his work. After giving some details of twelve cases of oxalic calculus, he says:—"We are authorized to draw the following conclusions:—6th. That from the dissection of calculi formerly mentioned, it appears that the oxalate-of-lime diathesis is preceded and followed by the lithic acid diathesis—a circumstance which seems to be peculiar to these two forms of deposit, and when taken in conjunction with the other circumstances already related, appears to show that they are of the same general nature, or, in other words, that the oxalic acid merely takes the place, as it were, of the lithic acid, and by combining with the lime naturally existing in the urine, forms the concretion in question. 7th. (Dr. Prout continues.) The diathesis being of a similar nature, the principles of treatment adapted for counteracting the original tendency to it must be also similar." And, as a medicine, muriatic acid was used to change the diathesis from the oxalate of lime to the lithic acid.

I find that the two deposits together may be met with on careful examination, by the microscope, of the urine in different cases of disease; and if the examination is made at different hours of the same day on a case in which oxalate of lime occurs, we shall not unfrequently find three hours after food, that instead of urate of ammonia being mixed with the oxalate of lime, there is phosphate of lime and oxalate, and no urate of ammonia. Thus at one hour we may find oxalate of lime alone; at another, oxalate of lime with urate of ammonia; and at a third examination, oxalate of lime and phosphate of lime, or phosphate of lime only; the variations in the acidity of the urine being the chief cause of the differences in the deposit.

Oxalate of lime is so insoluble in the distilled water that it might be well considered to be insoluble in the urine. Its occurrence in the form of crystals shows, however, that it cannot be insoluble; for crystalline form implies deposit from solution. Careful observation of the urine also shows that the oxalate of lime is soluble therein.

A medical man, in very tolerable health, aged 59, passed about a drachm of water at half-past ten in the morning, saying that he had a good deal of irritation. I examined it immediately. It was acid and had a slight cloudiness. Under the microscope I saw many globules, like mucus, some of them slightly serrated. I saw some dead perfectly formed spermatozoa, and a great many particles looking like the bodies of spermatozoa, tail-less—that is, slightly triangular and highly refracting. I looked most carefully for oxalate of lime, expecting to find it; but I could not find a single crystal any where, and no urate of ammonia was to be seen. At nine the following morning I again looked at the drachm of urine. There was a very transparent cloudy sediment, like mucus, only more transparent, occupying nearly one-fourth of the liquid in height. On examining a drop, myriads of small crystals of oxalate of lime were seen, and not a particle of urate of ammonia or uric acid. I had passed over similar observations before, by supposing that my first observation had not been made with sufficient care, but from the above, and other cases that have since occurred to me, I am certain that it sometimes requires many hours for the oxalate of lime to crystallize out. You cannot say that no oxalate of lime exists in any urine until at least twenty-four hours have elapsed from the time of the passing of the water.

It requires no skill and no preparation of the urine to find the oxalate of lime. The urine should be left to stand for twenty hours in a bottle, or tall glass; the upper part of the fluid should be poured off, and the last few drops remaining in the glass or bottle should be examined. A magnifying power of 320 times is generally sufficient, but the crystals are some times so small, that twice this power is necessary to determine the form. Generally oxalate of lime octohedra are thus found without the least

difficulty, sometimes in large single crystals, very frequently in aggregations of small octahedra, forming microscopic calculi. Dr. Golding Bird was the first observer who stated that these crystals, which had for some time previously been observed in urine, were oxalate of lime. The chemical proof is difficult, if not impossible, to obtain, for the octahedral crystals are rarely present in sufficient quantity to admit of perfect examination.—*Lancet*.

Death from Convulsions, Caused by the Irritation of a Calculus in the Bladder.—Francis McFadden, æt. 12, was admitted into the hospital with symptoms of stone in the bladder. Twelve months before a stone was removed by lithotripsy; and in the early part of last summer a new formation was removed by the same process. After each operation his health improved very much, but in the last few months the symptoms re-appeared with greater severity. About three weeks before admission he was carefully sounded, but no stone detected. Dr. Peace passed a sound into his bladder, and immediately thought he felt a stone; but fearful of increasing the vesical irritation, withdrew the instrument, and ordered him to be put to bed, and anodynes administered. During the afternoon he suffered intensely with vesical tenesmus and dysuria and about ten at night was seized with convulsions, which resisted all the remedies employed. In the morning he partly recovered his senses, but was in so exhausted a state that he died in a few hours after, a little over twenty-four hours after he was admitted into the house. It was afterwards stated by his mother, that he had been in such constant pain for the few days preceding his death, that he had been unable to sleep, or even to take his food. The urinary organs were examined sixteen hours after death. The kidneys were very pale, lobulated, and very much enlarged. The right kidney measured five inches in length by two and a half in width. The left rather less. The pelvis and infundibula were much dilated, and the ureters so much enlarged as to resemble the small intestines. In one of the dilated infundibula of the left kidney was found a calculus of the size of a large pea, the other infundibula con-

tained a small quantity of pus. On opening the bladder it was found to contain a stone one half inch in length, weighing 246 grains. The mucous membrane was injected, and covered with a thick mucus, and it, as well as the muscular coat, was very much thickened. There were no pouches in the gland. Prostate gland healthy. The calculus found in the kidney was the triple phosphate. That in the bladder was the triple phosphate with a thick loose coating of phosphate of lime. The whole formed on a nucleus consisting of a fragment distinctly recognizable. Permission to examine the head was refused. Most probably no organic change would have been found, as it is reasonable to suppose that the convulsions depended upon cerebral irritation propagated to the brain from the bladder and kidneys.—*Phil. Med. Exam.*

Differential Diagnosis between Cancer and Hypertrophy of the Stomach.

—By DR. BRUCH.—The following points may be of importance towards the differential diagnosis of these conditions; but it must be understood that they refer to only pure well-marked cases, and that for the complicated or combined instances there is no general rule, nothing but the details being sufficient:—

1. Hypertrophy, or the increase of the normal substance of an organ, with retention of its texture and figure, appears in the stomach as a gradual, and more or less uniform swelling of the gastric membranes. Cancer, which is always a true after-growth, or new structure, takes, with few exceptions, the form of a swelling, and appears as a circumscribed, prominent often knobbed or tuberculated, after-growth, which destroys the normal structure of the tissues.

2. Hypertrophy, even where it is the result of a cancerous constriction, is characterized by a *gradual* swelling of the membranes, having the proportion of their natural increase of thickness towards the pylorus; while on the other hand, cancer may be situated in any possible part of the stomach, and always exhibits a partial degeneration of the membranes.

3. In hypertrophy, often only one membrane (*viz.*, the muscular) suffers,

and its whole extent. In cancer, on the contrary, very often several membranes become transformed into one common after-growth.

4. Even when many membranes are hypertrophied, they are always seen as particular layers lying over each other; while in cancer sometimes any, sometimes all, are irrecognizable.

5. The division of the muscular coat into compartments is not characteristic of cancer. On the contrary, even where it occurs in true cancer, it only signifies hypertrophy of the muscular tunic.

6. In hypertrophy the coats are, at first, in spite of their thickening, separable from each other; in cancer they are fused in the after-growth.

7. In general and pure hypertrophy, the stomach is always narrowed and hardened. In cancer, especially of the pylorus, there is usually considerable dilation and thinning.

8. Hypertrophy may precede the cancerous new growth, and occurs as a partial hypertrophy of the neighbourhood simultaneously with the cancer; or is associated with cancer of the pylorus, as a secondary event, when constriction appears. In the latter case, the (general?) dilatation remains.

9. Chronic gastritis occurs as well in hypertrophy as in cancer; but it would appear that, in the first, it is more as a cause; in the last as an effect.

10. In hypertrophy, a large portion, or the whole, of the mucous membrane, is more frequently diseased; while in cancer, a great extent is commonly still normal.

11. The diagnosis during life is trustworthy only in those instances where appearances of constriction are present; since in other instances, hypertrophy is scarcely accompanied by any other symptoms than those of chronic gastritis.

12. A sensible knobbed swelling, especially when sharply defined, or many knots of a tumour in the epigastrium, speaks decisively for an after-growth of the pylorus, and against a pure hypertrophy; while on the contrary, a diffuse resistance and swelling of the epigastrium speaks for the latter condition, especially when the hard part corresponds to the form of the pyloric portion of the stomach. (That the swelling is impalpable, does not definitely exclude cancer.)

13. Displacement of the stomach, with sensible hardness, speaks for the great probability of an aftergrowth.

14. A limited and permanent sonorous sound on percussion, speaks for general hypertrophy, (narrowed and hardened walls); a diffuse and inconstant sonorousness for cancer (dilated and thinned walls.)

15. Vomiting at definite periods, especially many hours after eating, speaks very certainly, for cancerous constriction. (Dilatation of the gastritis). Continuous vomiting in the fasting state, or immediately after each injection, rather for hypertrophy (*i. e.*, for narrowing of the stomach, and for chronic gastritis, which latter certainly becomes augmented in the last stages of the cancer).

16. The quality of the matter vomited depends not so much on the form of the disease as on the condition of the gastric mucous membrane. Black (or "coffee" grounds) vomitings signify nothing but effusion of blood in the stomachal cavity.

17. In the case of a cancerous softening and destruction of the mucous membrane, in which elementary parts of the after-growth may be evacuated, the microscopic examination of the vomited matter must not be omitted.

18. A long duration of the disease, and an unbroken progressive development, speaks for hypertrophy. Cancer generally runs its course in from one to two years.

19. A sudden intermission of the vomiting, and of the other appearances of constriction, with subsequent return, accompanied by a sensible swelling, is one of the surest indications of cancer (commenced softening).

20. The absence of appetite is more frequent in hypertrophy (diffuse disease of the mucous membrane; good appetite is more usual in cancer (partial disease.)

21. Pain refers either to the mechanical inconvenience of the after-growth, or to chronic gastritis. It is, therefore, not characteristic.

22. The constitutional effect depends on the narrowing of the chronic gastritis, or the suppuration; and on the secondary events of emaciation, pain, obstruction, &c. It is, therefore, altogether of relative import.

23. With respect to etiology, continual mechanical injuries (local influences, as

in shoemakers, weavers, &c.) appear more to dispose to cancer. While spirit-drinking, gluttony, and nervous conditions (especially morbid and continuous nervous vomiting) seem to conduce to hypertrophies; acute and chronic inflammation appear of equal efficiency for both.

24. The existence of an isolated swelling once established, the diagnosis of cancer from other after-growths is scarcely of much practical interest. But lipoma, fibroid, or alveolar gelatinous tumours, or the benignant tumours generally, are indicated by the mildness of their phenomena, and the more frequent absence of constriction. Besides, they do not soften; hence they lack those symptoms which depend on this change. Disseminated deposits in other organs, namely, in the liver, together with the existence of a circumscribed swelling in the stomach, of course affirm cancer.—*Zetschrift fur Rat. Medizin.*

Clinical Convictions Respecting Ascites, Expressed in the Form of Propositions.—By DR. DUBIN.—1. When ascites is not the result of a pre-existing, present, acute or chronic primary peritonitis, it will be found to depend upon hypertrophy with degeneration of the hypochondriacal viscera, the presence of abdominal tumours, a prior or existing dysentery, or upon *cirrhosis* of the liver. 2. In fact, peritonitis depending on these various conditions of the viscera, is almost always the efficient cause of the effusion. In respect to the operation of visceral hypertrophy and abdominal tumours in inducing it, there can be no doubt. In dysentery, with ulceration of the mucous membrane, inflammation of the peritoneal coat is found. In *cirrhosis*, observation would seem to show that the fluid may collect in consequence of peritonitis, or, on the other hand, mechanically from obstruction of the capillaries of the liver. 3. Post-mortem examinations prove, that defective absorption by the lymphatics, as a cause of dropsy, is a scholastic fable. Atony may follow the distension and destruction of tissues in the dropsical, but it is never, or with exceeding rarity, primary. 4. Ascites must not be confounded with other serous effusions, especially with general anasarca. The common causes of general dropsy, as

hydræmia, scarlatina, Bright's disease, suppressed perspiration, &c., are not the direct causes of ascites, which, as already observed, has its own special cause, and seems also to recognize other directly or indirectly predisposing ones, such as intermitting fevers, abuse of spirituous liquors, and a certain inelastic and relaxed state of the organic tissues.

5. Diseases of the heart, so frequent a cause of anasarca, are never the primary cause of ascites; and if the two are found in co-existence it is a mere coincidence. A diseased heart may lead to a hypertrophied or degenerated state of the liver, and this may give rise to ascites.

6. In erroneous and old ascites, in which long and forcible pressure has been exerted upon the viscera by the fluid, a shortening of the intestinal tube takes place. In one case, the entire length of the canal was not more than three times that of the body.

7. The treatment by means of drastics is prompt, and always much desired by the patient, who wishes to relieve the distension as rapidly as possible. It is rare for them, however, to produce a permanent cure; and the relief they at first afford is often followed by a relapse, under the influence of which the patient quickly finds himself in a worse state than before. If a red, shining or excoriated tongue, indicate a pre-existing diarrhœa, in place of a relapse, drastics will cause irreparable mischief, by provoking a second and artificial diarrhœa, which will only cease with life itself.

8. Diaphoretics, employed in this generally non-febrile disease are praised in the books; but what practitioner ever prescribed them for apyretic ascites? Nature alone, in particular cases, contrary to our physiological laws, induces simultaneous profluvia of sweat and urine, until the ascites is totally dispersed. Iodine and mercurial frictions are but therapeutical delusions, although in cases in which the symptoms of peritonitis still exist, calomel may be of service. The frequent failure of diuretics is well known.

9. When even the local abstraction of blood is no longer admissible, and it is hence presumable that the peritonitis no longer exists, *compression* of the abdomen by a bandage is a useful aid to diuretics. Like all other means it may be misused; but twelve year's experience of it leads the author to state, that if the dropsy be not encysted, and the lower extremities have not become

oedematous, it will not only, in the majority of cases, remedy the effect, but frequently also remove the morbid cause of the effusion. In very many cases, he has seen the same diuretics, which had long been uselessly employed, succeed admirably as soon as a methodical compression was conjoined to their use.

10. After recovery, when the ascites has depended upon dysentery or primary chronic peritonitis, a relapse may be prevented by opening an issue at the inner side of the leg just below the knee. After the application of a very small blister, a minute ivory ball may be compressed against the denuded surface to effect this.

11. There are certain cases of anasarca, from *hydræmia*, in which the ascites, though not primary, is very considerable, and threatens suffocation from its rapid increase. In these there is always found a degree of hypertrophy of the liver, a section exhibiting it of a bright yellow colour, and of the consistence of soft chalk. The blood is scarcely red, and very watery. All the symptoms of chlorosis, and some of those of scorbutus, are present, as palpita on, syncope, vertigo, tinnitus, muscular debility, pallor of the mucous membranes, anorexia, thirst, constipation, paucity of urine, and sweating, with frequent attacks of epistaxis. In these cases, the *souffle* heard after the first sound of the heart is rather referrible to the serous crasis of the circulating fluid, than to any defect in the circulatory organ. For this train of symptoms the author had long sought medicinal substances, which while they proved unstimulating diuretics, might remedy the condition of the blood without disposing the organism too much to a state of phlogosis, which, in subjects of *hydræmia*, always terminates in new effusions, that in the result prove fatal, if they do not so in their immediate consequences. What he terms a "martial lemonade," has best fulfilled the chief indications by causing free diuresis. It is formed by dissolving six grains of sulphuret of iron in a pint and a half of sweetened water, adding a drachm of sulphuric acid. The use of this is contra-indicated if there is much febrile disturbance.—*Brit. & For. Med. Chir. Rev.*

SURGERY.

Case of Recovery from the passage of an Iron Bar Through the Head.—By HENRY J. BIGELOW, M. D., Professor of Surgery in Harvard University.—The following case, perhaps unparalleled in the annals of surgery, and of which some interesting details have already been published, occurred in the practice of Dr. Harlow of Cavendish, Vermont.

The accident occurred upon the line of the Rutland and Burlington Railroad, on the 13th of September, 1843. The subject of it, Phineas P. Gage, is of middle stature, aged 25, shrewd and intelligent. According to his own statement, he was charging with powder a hole drilled in a rock, for the purpose of blasting. It appears that it is customary in filling the hole to cover the powder with sand. In this case, the charge having been adjusted, Mr. Gage directed his assistant to pour in the sand; and at the interval of a few seconds, his head being averted, and supposing the sand to have been properly placed, he dropped the head of the iron as usual upon the charge, to consolidate or "*tamp it in.*" The assistant had failed to obey the order, and the iron striking fire upon the rock, the uncovered powder was ignited and the explosion took place. Mr. Gage was at this time standing above the hole, leaning forward, with his face slightly averted: and the bar of iron was projected directly upwards in a line of its axis, passing completely through his head and high into the air. The wound thus received, and which is more fully described in the sequel, was oblique, traversing the cranium in a straight line from the angle of the lower jaw on one side to the centre of the frontal bone above, near the sagittal suture, where the missile emerged; and the iron thus forcibly thrown into the air was picked up at a distance of some rods from the patient, smeared with brain and blood. From this extraordinary lesion, the patient has quite recovered in his faculties of body and mind, with the loss only of the sight of the injured eye.

The iron which thus traversed the skull weighs thirteen and a quarter pounds. It is three feet seven inches in length, and one and a quarter inches in diameter. The end which entered first is pointed; the taper being seven inches

long, and diameter of the point one quarter of an inch; circumstances to which the patient perhaps owes his life. The iron is unlike any other, and was made by a neighbouring blacksmith to please the fancy of the owner.

Dr Harlow, in the graphic account alluded to, states that "immediately after the explosion the patient was thrown upon his back, and gave a few convulsive motions to the extremities, but spoke in a few minutes. His men (with whom he was a great favourite) took him in their arms and carried him to the road, only a few rods distant, and sat him into an ox cart, in which he rode, sitting erect, full three-quarters of a mile, to the hotel of Mr. Joseph Adams, in this village. He got out of the cart himself, and with a little assistance walked up a long flight of stairs, into the hall, where he was dressed."

Mr. Adams, J. P., here spoken of, has furnished the following interesting statement:—"This is to certify that P. P. Gage had boarded in my house for several weeks previous to his being injured upon the railroad, and that I saw him and conversed with him soon after the accident; and am of opinion that he was perfectly conscious of what was passing around him. He rode to the house, three-quarters of a mile, sitting in a cart, and walked from the cart into the piazza, and thence up stairs, with but little assistance. I noticed the state of the left eye, and know, from experiment, that he could see with it for several days, though not distinctly. In regard to the elevated appearance of the wound, and the introduction of the finger into it, I can fully confirm the certificate of my nephew, Washington Adams, and others, and would add that I repeatedly saw him eject matter from the mouth similar in appearance to that discharged from the head. The morning subsequent to the accident I went in quest of the bar, and found it at a smith's shop near the pit in which he was engaged. The men in his pit asserted that 'they found the iron, covered with blood and brain,' several rods behind where Mr. Gage stood, and that they washed it in the brook, and returned it with the other tools; which representation was fully corroborated by the greasy feel and look of the iron, and the *fragment of brain* which I saw upon the rock where it fell."

The Rev. Joseph Freeman, who, soon after the accident, informed himself of the circumstances, says:—"I was at home on the day Mr. Gage was hurt; seeing a man ride rapidly to Dr. Harlow's door, I stepped over to ascertain the cause; and then immediately to meet those who I was informed were bringing him to our village. I found him in a cart, sitting up without aid, with his back against the foreboard. When we reached his quarters, he rose to his feet without aid, and walked quick, though with an unsteady step, to the hind end of the car, when two of his men came forward and aided him out, and walked with him, supporting him, to the house. I then asked his men how he came to be hurt? The reply was, 'The blast went off when he was tamping it, and the tamping iron passed through his head.' Soon after this, I went to the place where the accident happened. I found upon the rocks, where I supposed he had fallen, a small quantity of brains. There being no person at this place, I passed on to a blacksmith's shop, a few rods beyond, in and about which a number of men were collected. As I came up to them, they pointed out the iron, which has since attracted so much attention, standing outside of the shop-door. They said they found it covered with brains and dirt, and had washed it in the brook. The appearance of the iron corresponded with the story: it had a greasy appearance, and was so to the touch. After hearing their statement, as there was no assignable motive for misrepresentation, and finding the appearance of the iron to agree with it, I was compelled to believe, though the examination of the wound was not then known to me. I think of nothing further relating to this affair which cannot be minutely stated by others."

Dr. Williams first saw the patient, and makes the following statement in relation to the circumstances: "Dr. Harlow being absent at the time of the accident, I was sent for, and was the first physician who saw Mr. Gage, some twenty-five or thirty minutes after he received the injury. He at that time, was sitting in a chair upon the piazza of Mr. Adams' hotel, in Cavendish. When I drove up he said, 'Doctor, here is business enough for you.' I first noticed the wound upon the head before I alighted

from my carriage, the pulsation of the brain being very distinct; there was also an appearance which, before I examined the head, I could not account for—the top of the head appeared somewhat like an inverted funnel; this was owing. I discovered, to the bone being fractured about the opening for a distance of about two inches in every direction. I ought to have mentioned above that the opening through the skull and integuments was not far from one and a half inch in diameter; the edges of this opening were everted, and the whole wound appeared as if some wedge-shaped body had passed from below upward. Mr. Gage, during the time I was examining this wound, was relating the manner in which he was injured to the bystanders; he talked so rationally, and was so willing to answer questions, that I directed my inquiries to him in preference to the men who were with him at the time of the accident, and who were standing about at this time. Mr. G. then related to me some of the circumstances, as he has since done; and I can safely say neither at that nor any subsequent occasion, save once, did I consider him to be other than perfectly rational. The one time to which I allude was about a fortnight after the accident, and then he persisted in calling me John Kirwin; yet he answered all my questions correctly. I did not believe Mr. Gage at that time, but thought he was deceived; I asked him where the bar entered, and he pointed to the wound on his cheek, which I had not before discovered; this was a slit running from the angle of the jaw forward about an inch and a half; it was very much stretched laterally, and was discoloured by powder and iron rust, or at least appeared so. Mr. Gage persisted in saying that the bar went through his head: an Irishman standing by, said, 'Sure it was so, sir, for the bar is lying in the road below, all blood and brains.' The man also said he would have brought it up with him, but he thought there would be an inquest, and it would not do. About this time Mr. Gage got up and vomited a large quantity of blood, together with some of his food; the efforts of vomiting pressed out about half a tea-cup full of the brain, which fell upon the floor, together with the blood which was forced out at the same time. The left eye appeared nor-

dull and glassy than the right. Mr. G. said he could merely distinguish light with it. Soon after Dr. Harlow arrived, Mr. Gage walked up stairs, with little or no assistance, and laid down upon a bed, when Dr. H. made a thorough examination of the wounds, passing the whole length of his fore-finger into the superior opening, without difficulty; and my impression is, that he did the same with the inferior one; but of that I am not absolutely certain; after this we proceeded to dress the wounds in the manner described by Dr. H. in the Journal. During the time occupied in dressing, Mr. G. vomited two or three times fully as freely as before. All this time Mr. G. was perfectly conscious, answering all questions, and calling his friends by name as they came into the room. I did not see the bar that night, but saw it the next day after it was washed."

Dr. Harlow's account of his first visit to the patient, and of the subsequent symptoms is here appended:—"Being absent, I did not arrive at the scene of the accident until near six o'clock, p.m. You will excuse me for remarking that the picture presented was, to one unaccustomed to military surgery, truly terrific; but the patient bore his sufferings with heroic firmness. He recognized me at once, and said he hoped he was not much hurt. He seemed to be perfectly conscious, but was getting exhausted from the hæmorrhage, which was very profuse both externally and internally, the blood finding its way into the stomach, which rejected it as often as every 15 or 20 minutes; pulse 60, and regular. His person and the bed on which he was laid were literally one gore of blood. Assisted by my friend Dr. Williams, of Proctorsville, who was first called to the patient, we proceeded to dress the wounds. From their appearance, the fragments of bone being uplifted and the brain protruding, it was evident that the fracture was occasioned by some force acting from below upward. The scalp was shaven, the coagula removed, together with three small triangular pieces of the cranium; and in searching to ascertain if there were other foreign bodies there, I passed in the index finger its whole length, without the least resistance, in the direction of the wound in the cheek, which received the other finger in like manner. A portion

of the anterior superior angle of each parietal bone, and a semi-circular piece of the frontal bone were fractured, leaving a circular opening of about three and a half inches in diameter. This examination, and the appearance of the iron which was found some rods distant smeared with brain, together with the testimony of the workmen, and of the patient himself, who was still sufficiently conscious to say that 'the iron struck his head and passed through,' was considered at the time sufficiently conclusive to show not only the nature of the accident but the manner in which it occurred. I have been asked why I did not pass a probe through the entire extent of the wound at the time. I think no surgeon of discretion would have upheld me in the trial of such a fool-hardy experiment, in the risk of disturbing lacerated vessels, from which the hæmorrhage was near being stanchied, and thereby rupturing the attenuated thread, by which the sufferer still held to life. You will excuse me for being thus particular, inasmuch as I am aware that the nature of the injury has been seriously questioned by many medical men for whom I entertain a very high respect. The spiculæ of bone having been taken away, a portion of the brain, which hung by a pedicle, was removed, the larger pieces of bone replaced, the lacerated scalp was brought together as near as possible, and retained by adhesive straps, excepting at the posterior angle, and over this a simple dressing—compress, night-cap and roller. The wound in the face was left patulous, covered only by a simple dressing. The hands and forearms were both deeply burned nearly to the elbows, which were dressed, and the patient was left with the head elevated, and the attendants requested to keep him in that position. Ten p.m. same evening.—The dressings are saturated with blood, but the hæmorrhage appears to be abating; has vomited twice only since being dressed; sensorial powers remain as yet unimpaired; says he does not wish to see his friends, as he shall be at work in a day or two; tells where they live, their names, &c.; pulse 65; constant agitation of the lower extremities. 14th.—7 a.m. Has slept some; appears to be in pain; speaks with difficulty; tumescence of the face considerable, and increasing; pulse 70; knows his friends, and is

rational; asks who is foreman in his pit; hæmorrhage internally continues slightly; has not vomited since 12 p.m. 15th, 9 a.m. Has slept well half the night; sees objects indistinctly with the left eye when the lids are separated; hæmorrhage has ceased; pulse 75. Eight p.m. Restless and delirious; talks much, but disconnected and incoherent; pulse 84 and full; prescribed vin. colchicum, f3ss. every six hours, until it purges him; removed the night-cap. 16th, eight a.m. Patient appears more quiet; pulse 70; dressed the wounds, which in the head have a fœtid sero-purulent discharge, with particles of brain intermingled; no discharge from bowels. Ordered sulph. mag. ʒj. repeated every four hours until it operates; ice-water to the head and eye. A fungus appears at the external canthus of the left eye; says 'the left side of his head is banked up.' 17th, eight a.m. Pulse 84; purged freely; rational, and knows his friends; discharge from the brain profuse, very fœtid and sanious; wounds in face healing. 18th, nine a.m. Slept well all night, and lies upon his right side; pulse 72; tongue red and dry; breath fœtid; removed the dressings and passed a probe to the base of the cranium, without giving pain. Ordered a cathartic, which operated freely; cold to the head. Patient says he shall recover; he is delirious, with lucid intervals. 19th, 8 p.m. Has been very restless during the day; skin hot and dry; tongue red; excessive thirst; delirious, talking incoherently with himself, and directing his men. 20th and 21st Has remained much the same. 22d, 8 a.m. Patient has had a very restless night; throws his hands and feet about, and tries to get out of bed; head hot; says 'he shall not live long so.' Ordered a cathartic of calomel and rhubarb, to be followed by castor oil, if it does not operate in six hours. Four p.m., purged freely twice, and inclines to sleep. 23d. Rested well most of the night, and appears stronger and more rational; pulse 80; shaved the scalp a second time, and brought the edges of the wound in position, the previous edges having sloughed away; discharge less in quantity and less fœtid; loss of vision of left eye. From this time until the 3d of October, he lay in a semi-comatose state, seldom speaking unless spoken to, and then answering only in monosyllables. During this pe-

riod, fungi started from the brain, and increased rapidly from the orbit. To these was applied nitrate of silver cryst., and cold to the head generally. The dressings were renewed three times in every twenty-four hours; and in addition to this, laxatives, combined with an occasional dose of calomel, constituted the treatment. The pulse varied from 70 to 96—was generally very soft.—During this time an abscess formed under the frontalis muscle, which was opened on the 27th, and has been very difficult to heal. Discharged nearly ʒviij at the time it was punctured. October 5th and 6th. Patient improving; discharge from the wound and sinus, laudable pus; calls for his pants, and wishes to get out of bed, though he is unable to raise his head from the pillow. 7th. Has succeeded in raising himself up, and took one step to his chair, and sat about five minutes.

11th. Pulse 72; intellectual faculties brightening; when I asked him how long since he was injured, he replied, 'four weeks this afternoon,' at half past-four o'clock; relates the manner in which it occurred, and how he came to the house; he keeps the day of the week and time of the day in his mind; says he knows more than half of those who inquire after him; though he has memory as perfect as ever he would not take one thousand dollars for a few pebbles which he took from an ancient river bed where he was at work; the fungus is given way under the use of cryst. nitrate of silver; during all this time there has been a discharge of pus into the fauces, a part of which passed into the stomach, the remainder being ejected from the mouth. 20th. Improving; gets out and into bed with little assistance; sits up thirty minutes twice in twenty-four hours; is very childish; wishes to go home to Lebanon, N. H.; the wound in the scalp is healing rapidly. Nov. 8th. Improving in every particular, and sits up most of the time during the day; appetite good, though he is still kept upon a low diet; pulse 65; sleeps well, and he says has no pain in the head; food digests easily; bowels regular, and nutrition is going on well; the sinus under the frontalis muscle has nearly healed; he walks up and down stairs, and about the house into the piazza, and I am informed this evening that he was in the street to-day. I leave him for a week, with strict

injunctious to avoid excitement and exposures. 15th. I learn, on inquiry, that Gage has been in the street every day except Sunday, during my absence; his desire to be out and to go home to Lebanon has been uncontrollable by his friends, and he has been making arrangements to that effect; yesterday he walked half a mile, and purchased some small articles at the store; the atmosphere was cold and damp, the ground wet, and he went without an overcoat, and with thin boots; he got wet feet and a chill; I find him in bed, depressed and very irritable; hot and dry skin; thirst; tongue coated; pulse 110; lancinating pain in the left side of the head and face; rigors, and bowels constipated. Ordered cold to the head and face, and a black dose to be repeated in six hours, if it does not operate. He has had spiculæ of bone pass into the fauces, which he expelled from the mouth within a few days. 16th. No better; cathartic has operated freely; pulse 120; skin hot and dry; thirst and pain remain the same; has been very restless during the night; venesection [3xvj. Ordered calomel. gr. x. and ipecac. gr. ij. followed in four hours by castor oil. Eight p. m., same day. Purged freely; pulse less frequent; pain in the head moderated; skin moist. R. Antim. et potassa tart., gr. iij; syr. simplex, fʒvj; dose a dessert spoonful every four hours. 17th. Improving; expresses himself as feeling better in every respect; has no pain in the head. 18th. Is walking about the house again; says he feels no pain in the head, and appears to be in a way of recovering if he can be controlled.

Remarks—The leading feature of this case, is its improbability. A physician who holds in his hand a crow-bar, three feet and a half long, and more than thirteen pounds in weight, will not very readily believe that it has been driven with a crash through the brain of a man who is still able to walk off, talking with composure and equanimity of the hole in his head. This is the sort of accident that happens in the pantomime in the theatre, but not elsewhere. Yet there is every reason for supping it in this case literally true. Being at first wholly sceptical, I have been personally convinced; and this has been the experience of many medical gentlemen who, having first heard of the circumstances, have had a

subsequent opportunity to examine the evidence.

This evidence is comprised in the testimony of individuals, and in the anatomical and physiological character of the lesion itself.

The above accounts from different individuals, concur in assigning to the accident a common cause. They are selected as the most complete among about a dozen of similar documents forwarded to me by Dr. Harlow, who was kind enough to procure them at my request; and which bear the signature of many respectable persons in and about the town of Cavendish, and all corroborative of the circumstances as here detailed. The accident occurred in open day, in a quarry in which a considerable number of men were at work, many of whom were witnesses of it, and all of whom were attracted by it. Suffice it to say, that in a thickly populated country neighbourhood, to which all the facts were matter of daily discussion at the time of their occurrence, there is no difference of belief, nor has there been at any time doubt that the iron was actually driven through the brain. A considerable number of medical gentlemen also visited the case at various times to satisfy their incredulity.

Assuming the point that the wound was the result of a missile projected from below upwards, it may be asked whether the wound might not have been made by a stone, while the bar was at the same moment thrown into the air. It may be replied in answer, that the rock was not split, nor, as far as could be learned, disintegrated. Besides, an angular bit of stone would have been likely to have produced quite as much laceration as the bar of iron; and it is in fact possible that the tapering point of the latter divided and repelled the soft parts, especially the brain, in a way that enabled the smooth surface of the iron to glide through with less injury. And assuming the only possible hypothesis, that the round bar followed exactly the direction of its axis, the missile may be considered as a sphere of one and a quarter inches diameter, preceded by a conical and polished wedge.

The patient visited Boston in January, 1850, and remained some time under my observation, during which he was presented at a meeting of the Boston So-

ciety for Medical Improvement, and also to the medical class at the hospital. His head, now perfectly healed, exhibits the following appearances.

A linear cicatrix of an inch in length occupies the left ramus of the jaw near its angle. A little thickening of the soft tissues is discovered about the corresponding malar bone. The eyelid of this side is shut, and the patient unable to open it. The eye considerably more prominent than the other, offers a singular confirmation of the points illustrated by the prepared skull described below. It will be there seen that the parts of the orbit necessarily cut away are those occupied by the levator palpebræ superioris, the levator oculi, and the abducens muscles. In addition to a ptosis of the lid, the eye is found to be incapable of executing either the outward or upward motion; while the other muscles animated by the motor communis are unimpaired. Upon the head, and covered by hair, is a large unequal depression and elevation. A portrait of the cast of the shaved head is given in the plate; and it will be there seen that a piece of cranium of about the size of the palm of the hand, its posterior border lying near the coronal suture, its anterior edge low upon the forehead, was raised upon the latter as a hinge to allow the egress of the bar; and that it still remains raised and prominent. Behind it is an irregular and deep sulcus some inches in length, beneath which the pulsations of the brain can be perceived.

In order to ascertain how far it might be possible for this bar of an inch and a quarter diameter to traverse the skull in the track assigned to it. I procure a common skull, in which the zygomatic arches are barely visible from above; and having entered a drill near the left angle of the lower jaw, passed it obliquely upwards to the median line of the cranium just in front of the junction of the sagittal and coronal sutures. This aperture was then enlarged until it allowed the passage of the bar in question, and the loss of substance strikingly corresponds with the lesion said to have been received by the patient. From the coronoid process of the lower jaw is removed a fragment measuring about three-quarters of an inch in length.—This fragment in the patient's case might have been fractured and subsequently re-united.

The hole now enters obliquely beneath the zygomatic arch, encroaching equally upon all its walls. In fact, it entirely occupies this cavity; the posterior wall of the antrum being partially excavated at the front of the hole, the whole orbital portion of the sphenoid bone being removed behind, as also the anterior part of the squamous portion of the temporal bone, and the internal surface of the zygoma and malar bone laterally. In the orbit, the sphenoid bone, part of the superior maxillary below, and a large part of the frontal above, are cut away, and with these fragments much of the sphenomaxillary fissure; leaving, however, the optic foramen intact about a quarter of an inch to the inside of the track of the bar.

The base of the skull upon the inside of the cranium presents a cylindrical hole of an inch and a quarter diameter, and such as may be described by a pair of compasses, one leg of which is placed upon the lesser wing of the sphenoid bone at an eighth of an inch from its extremity, cutting the frontal, temporal, and sphenoid bones; the other, half an inch outside the internal optic foramen.

The calvaria is traversed by a hole, two-thirds of which is upon the left, and one-third upon the right of the median line, its posterior border being quite near the coronal suture. The iron freely traverses the oblique hole thus described.

It is obvious that a considerable portion of the brain must have been carried away; that while a portion of its lateral substance may have remained intact, the whole central part of the left anterior lobe, and the front of the sphenoidal or middle lobe must have been lacerated and destroyed. This loss of substance would also lay open the anterior extremity of the left lateral ventricle; and the iron, in emerging from above must have largely impinged upon the right cerebral lobe, lacerating the falx and the longitudinal sinus. Yet the optic nerve remained unbroken in the narrow interval between the iron and the inner wall of the orbit. The eye, forcibly thrust forward at the moment of the passage, might have again receded into its socket, from which it was again somewhat protruded during the subsequent inflammation.

It is fair to suppose that the polished conical extremity of the iron which first entered the cavity of the cranium pre-

pared the passage for the thick cylindrical bar which followed; and that the point, in reaching and largely breaking open the vault of the cranium, afforded an ample egress for the cerebral substance thus preventing compression of the remainder.

Yet it is difficult to admit that the aperture could have been thus violently forced through without a certain comminution of the base of the cranium driven inwards upon the cerebral cavity.

Little need be said of the physiological possibility of this history. It is well known that a considerable portion of the brain has been in some cases abstracted without impairing its functions. Atrophy of an entire cerebral hemisphere has also been recorded.

But the remarkable features of the present case lie not only in the loss of cerebral substance, but also in the singular chance which exempted the brain from either concussion or compression; which guided the enormous missile exactly in the direction of its axis, and which averted the dangers of subsequent inflammation.

An entire lung is often disabled by disease; but I believe that there is no parallel to the case in the Hunterian collection of a lung and thorax violently transfixed by the shaft of the carriage.

Taking all the circumstances into consideration, it may be doubted whether the present is not the most remarkable history of injury to the brain which has been recorded.—*Amer. Jour. of Med. Science.*

Case of Homicidal Wound in the Abdomen. By C. A. GORDON, Esq., M. D.—Corporal John Grace, 57th Regiment, aged 22 years, of strong and healthy constitution, was at half-past 5 A. M., on the 2d November, 1849, brought to hospital, suffering from inability to void his urine, and complaining of severe pain in the perineum. There was a small and apparently trifling wound, into which a probe was introduced to the depth of an inch in a downward direction in the parietes of the abdomen, about midway between the pubis and umbilicus, and a little to the left of the mesial line; and, on being questioned, he stated that about eleven o'clock the previous night, while in a scuffle with a civilian, he received a severe kick in the perineum, and was at the same time

conscious of sustaining some injury in the abdomen; but afterwards walked upwards of a quarter of an English mile to his barracks, where, having to undress in the dark, he did not observe the blood that issued from the wound, nor did he suffer in any way until about half-past four o'clock, when he awoke labouring under the symptoms for which he was sent to the hospital.

On admission, two ineffectual attempts were made to introduce the catheter. Venesection was then employed; fomentations applied to the abdomen, and a draught, consisting of half a grain of tartar emetic, twenty-five minims of tincture of opium, and an ounce of camphor mixture, administered at intervals of half an hour. After the third dose urine flowed freely.

The report of the case in the medical register states that, at a quarter past 4 P. M., he has not voided urine, and now suffers a good deal of diffused pain around the wound. The surface is cool, and he is free from pyrexia. Bowels have not been moved since he came to hospital.

At half-past nine P. M., of the 2d, the pain in the abdomen continuing, and the pulse being 120, and small, venesection was performed. He had half a grain of tartar emetic, and half a grain of opium, every two hours; and the bowels being confined, an enema of gruel was administered, but did not operate.

On the morning of the 3d, he was reported not to have slept during the previous night; has voided urine three times; bowels have not been moved; tenderness of abdomen less; surface moist; pulse still rapid and small; tongue coated with grey ash-coloured fur. An ounce of castor oil was now administered in enema, and fomentations ordered to be continued to the abdomen.

The noon report states, that within the last hour the pain in the abdomen has increased in severity. The countenance is assuming a more anxious expression. He now states, that early during the night he was seized with shivering, and that he again experienced a sensation of coldness immediately before the present accession of pain. The enema has not yet operated. Pulse small.

At eleven P. M.—He continues to suffer much from pain in the abdomen.—The bowels have not been moved, fur-

ther than that the enema has been voided. The expression of the countenance is very anxious, and the features are assuming a sunken appearance. He is reported to have been incoherent during the evening, and now talks somewhat wildly. Surface cool; tongue loaded as above described; pulse 140, and small.

The treatment at this stage consisted in the administration of a pill, containing one grain of calomel, a quarter of a grain of tartar emetic, and half a grain of opium, every second hour since noon, fomentations being kept constantly applied to the abdomen; and now, while these remedies were continued, at regular intervals, an ounce of castor oil, with two drops of croton oil, and twenty drops of tincture of opium, were administered.

At seven A. M. of the 4th, it is stated that within the last half hour a decided change to the worse has taken place; he is deadly pale. The pulse at the wrists is almost imperceptible, and he is quite incoherent. The medicine operated very freely during the night, and he now voids feces and urine in the bed. While this report was being written he sank and died.

Post-mortem appearances thirty-two hours after death.—Abdomen; a wound of half an inch in length and a quarter of an inch in breadth was observed in the abdomen, situated three inches below the umbilicus, and half an inch to the left of the mesial line. This wound extended through the left rectus and deep abdominal fascia, in which it formed an aperture of an inch in breadth. It was then traced through the large omentum and entered one of the convolutions of the ileum, in which it formed a small aperture of about a quarter of an inch in extent, the edges of which were surrounded with inflammation, with some lymph adhering.

The peritoneum presented marks of most extensive inflammation along its entire extent, and a large quantity of purulent effusion existed throughout the whole of the abdominal cavity, and occupied spaces between the folds of the small intestines, the external surface of which was also extensively inflamed.

Remarks.—This case is looked upon as being of considerable importance, showing, as it does, the very serious na-

ture, of an injury that, under certain circumstances, it is possible to inflict upon a person, without his almost being aware of it; for here we have a soldier receiving his death-wound by the hand of a murderer, and yet afterwards walking a considerable distance; going to bed as usual, and for a period of upwards of five hours not being at all aware of the nature of the wound; to which his attention was soon then accidentally drawn.

We also from it see, that in some cases of wounds of the abdomen, that excessive sinking and anxiety which are supposed invariably to attend such injuries, do not actually occur.—*Medical Gazette.*

Stricture treated without Operation.

—In laying before our readers faithful reports of the surgical practice of the hospitals of London, we have had frequent opportunities of adverting to the treatment of stricture. We need not recapitulate the various methods which are in the present day advocated by different surgeons in obstinate cases of stricture of the urethra; the potassa fusa, internal section, perinæal section, &c., have by turns been so loudly extolled that the profession are fully acquainted with these plans of treatment. But the old and effectual method of gradually dilating the narrowed canal should likewise obtain a full share of attention, and we have no doubt, if we judge from the success which Mr. Holt has obtained by gentle and patient dilatation, that this mode of remedying stricture is of great value. We proceed at once to adduce an outline of the cases thus treated by Mr. Holt:—E. G., aged 59, a tall and formerly a very robust man, was admitted March 26, 1850, under the care of Mr. Holt. He has had three attacks of gonorrhœa; the two first averaging a period of two months, but the last of longer duration, attended with severe scalding and protracted discharge. 15 months after the last attack he noticed an appreciable difference in the size of the stream during micturition; he was also compelled to pass urine more frequently, and evacuation of the contents of the bladder occupied a longer period than formerly. He neglected these premonitory symptoms until they had existed for six months, when, after

committing an excess, he was attacked with the retention of urine, for which a No. 3 catheter was passed with considerable difficulty, but with immediate relief. Although cautioned of the necessity of undergoing the necessary treatment, he neglected himself, and found after a further lapse of nine months that he could only pass urine in the smallest possible stream, and occasionally by drops. The urine was loaded with mucus, and his health began to fail. He then placed himself under medical superintendence, but only continued for a limited period, the greatest size then attained being a No. 2 sound, which, from his account, it is extremely probable never entered the bladder at all. The stream became again of the smallest size, and for the last twelve years has past guttatim; in fact, to use his own expression, the water was continually running from him, saturating his cloths, filling his boots, and compelling him to give up his employment of attending to the steamboats at Hungerford pier.

Upon admission, Mr. Holt desired that the bowels might be cleared with castor-oil previous to the introduction of the catheter: this was attended to, and a No. 1 catheter was attempted, but it was found impossible to pass it more than half an inch from the meatus; it there entered a constricted portion, but was so firmly grasped as to defy all attempts at progression. The catheter was allowed to remain for half an hour. Three days afterwards the instrument was again introduced, but only proceeded as far as before, yet, by the most persevering efforts, at the end of one month, a No. 1 entered the bladder, and was allowed to remain. The size of the catheters were gradually increased until No. 8 could be passed with facility; it was then withdrawn for an hour, and re-introduced on the next day. The instrument was allowed to remain out two hours, and on the third, three hours, so that in a few days it was only necessary to pass the same size once a day. After a further expiration it was passed every other day, and at the end of a fortnight increased to No. 9. This was shortly exchanged for No. 10, and the man now passed urine as freely as ever; is not compelled to get up in the night, or to empty the bladder more than three or four times in the day. The sediment in

the urine has entirely subsided, and he is rapidly gaining flesh and strength. Previous to his affection of the urethra he weighed fourteen stone six pounds, but on admission had decreased to ten stone four pounds-

Mr. Holt considers that in the treatment of this case no operative procedure would have been justifiable, the stricture being of a cartilaginous character, and extending from about half an inch from the meatus to the neck of the bladder. Mr. Holt has never had a case (although a great number has come under his care) where it has been necessary to perform any other operation than the gradual introduction and increase in the size of the catheter or sound. He believes that when patience and the most gentle means are had recourse to in the treatment of stricture, no case is impassable, or will not yield to the treatment by dilatation; and that the disease will not occur any more frequently (if so frequently) as when operative procedure is employed. The most Mr. Holt considers it necessary to inculcate is the re-introduction of the catheter once or twice a year, and this is more as a precaution, and to satisfy the surgeon that the canal remains patulous.

The next case refers to a patient who suffered from a stricture of twenty-six years' duration. He is aged 52, and was admitted in May, 1850. This man had three attacks of gonorrhœa averaging two months' duration, and not attended with severe inflammatory symptoms; twelve months after the last attack he experienced difficulty in micturition, and his urine was propelled in a forked stream. His bladder became irritable, the efforts to relieve that viscus were very frequent, and the stream considerably diminished in size, yet he neglected to seek professional assistance until compelled by retention of urine. It was then found impossible, by the gentlemen under whose care he was, to overcome the obstruction by the introduction of the catheter. Opium and the warm bath were had recourse to, and with apparent benefit, for he passed a small quantity of urine. The urethra, however, gave way in the course of the next day, and the penis, perinæum, and scrotum became the recipients of the infiltrated urine. Free incisions were made for its escape, poultices applied, and a stimulating plan of treatment adopted; in the

course of two months, the man's health, which had been materially interfered with, became improved, but all attempts to introduce the catheter were futile, and he was recommended to go into the country for a short time. Upon his return, finding himself but little improved, and having two fistulous openings in the perineum, he was admitted under the care of Mr. Holt.

The same preparatory treatment was adopted in this case as in the former, and at the expiration of two days an attempt was made to introduce the No. 1 catheter. It entered the stricture, but could not be passed into the bladder, and Mr. Holt was content, upon a first trial, with having brought the point of the instrument within the orifice of the stricture, the urethra being of the most irritable kind. No further interference was had recourse to until the expiration of three days when the same instrument was again introduced, and with somewhat better success. Upon a third trial it passed the first obstruction, but became entangled at a second. This latter was, however, after three weeks' perseverance (only the most gentle means being used) overcome and the instrument glided into the bladder. A sound, instead of a catheter, having been introduced, it was necessary that it should be withdrawn, and as it was not desirable to create too much irritation by a second passage of the instrument, no further attempt was made for three days, when after considerable difficulty, a gum-elastic catheter was introduced, and secured in the usual manner.

The difficulty had principally arisen in consequence of the flexibility of the instrument employed, it not being sufficiently firm to be accurately guided along the canal. The catheter was allowed to remain two days, and having become perfectly loose, was removed for the purpose of introducing a larger one, but in this, as happened in some other cases, the larger instrument would not pass, and sooner than create undue irritation, Mr. Holt preferred leaving the catheter out, and proceeding in the ordinary way by gradual dilatation, and beginning at the lowest number. The same sized instrument was again introduced after a short interval; and about six weeks after the first introduction into the bladder, No. 8 passed with facility. The fistulous

openings are rapidly healing, the man's appearance and general health are materially improved, and he passes his urine in a good stream.

Mr. Holt, in some remarks which he made on these cases, stated, that with regard to Mr. Syme's advocacy of dividing a stricture, through which a catheter can be passed, he considered that in 999 cases out of 1000 this operation is not only unnecessary, but perfectly unjustifiable. Mr. Holt has never seen or had a case under his own care, through which he could not get an instrument; and having once passed it fully through, he could proceed, with occasional interruptions, until a sound, the natural calibre of the urethra, was easily admitted into that canal. Mr. Holt thinks that if patients and surgeons will not have the *patience* to overcome the manifold difficulties in the treatment of stricture, the latter will of course operate; but as he considers the same end may be obtained by much less objectional means, he never would advocate an operation that must necessarily be attended with considerable danger. Mr. Holt thinks Mr. Syme's statement quite correct, with regard to the case mentioned by that gentleman, where a catheter was retained in the bladder, until No. 8 could be passed with facility, and withdrawn, the patient in a few days being as bad as he was before; but if Mr. Syme had gradually left off the introduction of the catheter, as Mr. Holt did in the first of the above mentioned cases, he (Mr. Holt) would venture to assert that no such result would have taken place, but that the patient would, after three weeks or a month, have been enabled to have a larger size passed instead of recurring to his original condition.—*Lancet*.

The Site of Morbid Action in Diseases of Bone.—By Professor GOODSIR, of Edinburgh. —I have, in another place, directed the attention of the physiologist to the important distinction which exists between the essential and accessory elements of a texture. "A texture may be considered either by itself or in connexion with the parts which usually accompany it. These subsidiary parts may be removed, without interfering with the anatomical constitution of the texture. It is essential-

ly non-vascular, neither vessels nor nerves entering into its intimate structure. It possesses in itself those powers by which it is nourished, produces its kind, and performs the actions for which it is destined; the subsidiary or super-added parts supplying it with materials, which it appropriates by its own inherent powers, or connecting it in sympathetic and harmonious action with the other parts of the organism to which it belongs."

The neglect of this distinction by the pathologist has been the cause of much misconception regarding morbid action in textures, and has introduced many errors into the general theory of disease. Disease may have its site either in the essential or accessory elements of a texture.

Our knowledge of the diseases which have their site in the essential elements of the textures is still in its infancy; but I am inclined to believe that they consist principally of alterations in the nutritive and reproductive functions, in the chemical or physical constitution of the textures. The fatty degeneration of the muscular texture is a familiar example of a morbid change of this kind.

The great majority of the recognized morbid changes have their site in the accessory elements of textures. They are situated in the midst of the areolar texture, and among the vascular and nervous networks which separate as well as connect all the essential textural elements of the frame. They consist generally of bloody or other infiltrations; of lymph, in various stages of development; of pus; of the various forms of new formation, such as cancer, tubercle, &c. It will thus be perceived that the majority of diseases are situated, not in the essential textures of a part, but around or amongst them; that the majority of these are new formations, parasitic in their nature, making their appearance, undergoing development, and occupying a position in the areolæ of that general connecting texture, which, either in the form of the nucleated celule, or of the filamentous fibre, is the first to appear, as well as the most lasting and abundant, of all the textures.

The more distinct the conception, therefore, which an observer may possess of the relative position of the es-

sential and accessory elements of any given texture, the better prepared will he be to investigate and understand the phenomena of diseased action of the texture.

The successful investigation of the site and phenomena of diseases in one texture, will render the investigation in all the others comparatively easy. I have been accustomed to consider the osseous texture as best adapted for this purpose, from its stability, and the comparative ease with which its essential and accessory parts may be separated from one another, distinguished, and examined. "A well macerated bone is one of the most easily made, and at the same time one of the most curious, anatomical preparations: it is a perfect example of a texture completely isolated; the vessels, nerves, membranes, and are all separated, and nothing is left but the non-vascular osseous substance."

The accessory elements are the periosteum, with the vessels and nerves which ramify in it; the cells, areolar texture, fat, vessels, and nerves, which occupy the continuous network of haversian canals and cancelli, which are hollowed out in hard substance.

I have been led to conclude—

1. That in the osseous as well as in the other textures, we must distinguish between those morbid conditions which have their site in the essential, from those which are situated in the accessory, parts of texture.

2. That, in reference to the changes in the essential parts of bone, caries, one of the most obstinate and painful affections of the texture, depends on the more or less complete obliteration of the corpuscles and canaliculi, and the conversion of the carious surface for a certain depth into a substance resembling the enamel of the teeth.

3. That all the inflammatory changes in bone have their site in, and depend on, the increase or diminutions in the number and size of the haversian canals.

4. That all the malignant and non-malignant growths in bone have their site in haversian canals.

5. The various forms of spicular and laminated exostosis, which are found co-existing with malignant or non-malignant growths, are necessary results of the dilatation and extension of the haversian canals.—*Monthly Jr.*

Diagnosis of Abscess of Bone—By EDWARD STANLY, F.R.C.S.—The diagnosis of abscess of bone requires particular notice.

The symptoms which belong to neuralgia of bone, and to simple inflammation of its tissue, have, in many instances, so closely resembled circumscribed abscess, as to render the diagnosis a matter of difficulty; and it is a diagnosis of much importance, for the right determination of cases in which perforation of bone should be undertaken with the expectation of finding matter.

The neuralgic affection of bone has the following special features:—The nervous or hysteric character of the constitutional symptoms; the pain, although severe, not limited to a circumscribed space, not aggravated by movement, and occasionally attacking the corresponding spot of the other limb; further, the pain does not yield to depletory or sedative measure. On the other hand, the symptoms accompanying circumscribed abscess of bone are not generally such as bespeak the hysteric temperament; but this distinction must not be too confidently relied on. The abscess in bone, especially in young females, has given rise to well-marked, nervous, local, and constitutional symptoms; and if, in addition to these, there should be thickening and tenderness of the coverings of the bone, it will be difficult to determine whether the source of pain be exclusively neuralgic, or whether there is not, at the same time, matter confined within it.

The diagnosis between circumscribed abscess and inflammation of bone, is not always well-marked. In some instances simple or syphilitic inflammation of bone have so nearly resembled circumscribed abscess, as to be mistaken for it. These inflammatory attacks, it is true, chiefly affect the shaft of the bone, while circumscribed abscess rarely occurs elsewhere than within their articular ends; yet, as in the following case, difficulty may be experienced.

A gentleman, *æt.* 25, when first seen by Mr. Stanly, had for five years suffered from enlargement of the shaft of the tibia, presumed to be syphilitic. The swelling was well defined, hard, and the size of the fist. Mercury, iodine, together with various local remedies, has been unsuccessfully employed. At length, an incision carried

freely over the swelling down to the bone, was followed by immediate and permanent relief of the pain. A different view of the case might have led to perforation of the tibia in the expectation of finding matter.—*Dub. Med. Press.*

MATERIA MEDICA.

Lentils—Revalenta—Ervalenta.—In the year 1845 we exposed the nature of the “Ervalenta and Melasse de Cochinchine,” sold as remedies for constipation by Mr. Wharton, who was tried before the Cour Royale de Paris for the sale of secret remedies. The ervalenta was found to be the meal of the common lentil (*Ervum lens*); and the melasse common treacle (molasses.) In 1848, we noticed the “Revalenta Arabica,” described by the vendor as “a nutritive and eminently curative secula, derived from an African plant.” This also proved, on examination with the microscope, to be lentil meal. When the fact became known a fresh impulse was given to the sale of lentil meal by the puffs which had been circulated in its favour under its new and imposing names. Several chemists and others, throwing off the disguise, offered to the public the old-fashioned commodity on its own merits, and at a reasonable price. But it appears that in anticipation of the possible discovery of the secret, a precaution had been taken, which is the most ludicrous part of the farce.

In the year 1843, Alfred Hooper Neville, one of the vendors of lentil meal *in disguise* took out a patent, assuming to be for improvements in preparing lentils and other matters for food, and the vendors of lentil meal, *in propria persona*, are now threatened with legal process for an illegal infringement of the patent!

Being unable to imagine any just grounds on which such a patent could be obtained, we have procured a copy of the specification, which is subjoined:—

“My invention relates, first, to preparing lentils, by splitting them and separating the husk therefrom, whereby lentils are rendered fit for food for those purposes where split peas are now used. And secondly, my invention relates to manufacturing flour from lentils, which may be used in soups and other food, and when desired to heighten the flavour,

such flour is combined with a small quantity of curry powder, which combined preparation will be found very useful in the making of puddings and other preparations of food. And in order that the invention may be fully understood, I will explain the means pursued by me. I first wash and then dry the lentils; I then split them with stones in like manner to that practised when splitting peas; and I would state, that I do not claim the simple act of splitting lentils, as that has heretofore been practised when preparing food for horses. The first part of my invention, consisting of separating the lentils from husks, and thus rendering the same fit for making puddings and other food for man; and I cause the husks to be separated by means of winnowing or other suitable machines, and it is the separated product which constitutes the first novelty of my invention; and when it is intended to make flour therefrom, I cause the same to be ground into flour by suitable stones or other grinding machinery; and when curry powder is to be mixed therewith, I apply and intimately mix about one ounce with about four pounds of the flour of lentils, which will be found to improve the flavour of the lentils.

Having thus described the nature of my invention, I would wish it to be understood, that what I claim is, first, the manufacture of a product of lentils separated from the husk, and thus rendered suitable for food for man. And secondly, I claim the manufacture of flour of lentils separated from the husk thereof, which will be found a valuable material for the making of puddings, soups, and other articles of food for man. And I also claim the combining with such flour of lentils a small quantity of curry powder. In witness whereof, I the said Alfred Hooper Neville have hereunto set my hand and seal this 23rd day of September, in the year of our Lord, 1843.

ALFRED HOOPER NEVILLE."

Novelty being the fundamental requisite in every patent, this specification either contains something new, or it is a nonentity. Does the novelty consist in reducing lentils to a state "fit for making puddings and other food for man?" We are told in Genesis (ch. xxv., v. 34) that "Jacob gave Esau bread and pottage of lentils." Without any patent process, this pottage was so unexception-

able, that for one mess of it Esau sold his birthright. Lentils are mentioned as articles of diet by Xenophon and other ancient writers, and also in old Encyclopædias. It is stated that they are used as fodder for cattle, and "for making admirable pea-soup." They are used as ordinary diet in Arabia and other countries, where the name of Neville is unknown.

There is therefore no novelty in the preparation of lentils for human food, neither is there any novelty in the mode of preparation described by the patentee, for this is done, first, by splitting (for which no claim is made); secondly, "by means of winnowing or other suitable machines," which separate the chaff. thirdly, by grinding into flour "by suitable stones or other grinding machinery." These are the processes adopted by every miller for reducing grain into flour. The only remaining invention (?) is, that of intimately mixing an ounce of curry powder with about four pounds of meal, to improve the flavour. The flavour will of course depend on the ingredients used in making the curry powder, on which no instructions are given.

A specification so entirely destitute of novelty or invention is quite a curiosity. Any person who reads it must be convinced that the patent is available only for the purpose of advertisement.

The manner in which this advertising is carried on demands exposure. We have before us a printed bill (dated July, 1850) recommending "The Revalenta Arabica, discovered, exclusively grown, and imported by Dr Barry and Co., sole owners of the Revalenta estates, and of the patent machine by which ALONE the curative principles of the plant can be developed." This contains an IMPORTANT CAUTION against the "deception which has been tried by FIFTY DIFFERENT GANGS OF SWINDLERS, who, too lazy to work honestly for their living, try to levy contributions on the credulous or superficial, by offering them trashy compounds of peas, beans, lentils, Indian (corn?) and oatmeal, worth about one penny per lb., under some imitation of the name of 'Du Barry's inimitable Revalenta Arabica.'" "Messrs. Du Barry and Co. have taken the trouble to analyze these miserable imitations, and found them excellently adapted for PIGS, being respectively heavy, irritating, and

heating, they would play sad havoc with the delicate stomach of an invalid or infant." The Revalenta is sold in pound canisters at 2s. 9d., super-refined quality, ten pounds, 33s.

"Neville's patent flour of lentils" is sold with the Royal Arms in packets at 6d. and 1s.; or six pound canister, 5s. 6d., with the caution—"Be not deceived by fine names and exorbitant charges."

A correspondent has forwarded to us an original letter, which he received last May from Neville and Co., stating, "we are not a buyer of lentils at the price you name. We have between forty and fifty tons by us, and should be pleased to sell some at 2d. per lb., delivered in Manchester."

The question naturally arises: does Du Barry include Neville & Co., among the "gangs of swindlers?" Du Barry has purchased of Neville a licence under his patent. We may conclude, therefore, that the interests are consolidated, while the semblance of hostility is preserved. Probably it may be explained in this way:—A. puffs a well-known article of food into notoriety under a new name, describing it as the produce of a plant "resembling our English honeysuckle;" B. discovers what it is, and takes out a patent for it under its real name. If A. were to upset the patent he would expose himself; a compromise is therefore agreed upon. A. continues to bait his hook with the article under a fine name at 2s 9d. B. uses the Royal Arms as his bait, and charges 1s. If an honest tradesman presumes to sell the article without disguise or deception at the market price, A. denounces him as a "swindler," and B. pounces upon him with a legal process for infringing the patent! B. would be pleased to sell a portion of his stock at 2d. per lb. but denies to the purchaser the right of grinding it, and reducing it to a state "fit for the food of man." A. maintains that it is only fit for pigs (unless sold under a fine name, which raises the price from 1d. to 2s. 9d.)

We have not pointed out who are the "swindlers" alluded to by Mr. Du Barry. This being a delicate question, we leave our readers to make the discovery.
—Ph. Jr.

MEDICAL JURISPRUDENCE.

Poisoning by Nitric Acid.—Dr. J.M. Warren has reported the following case: The patient was a negress, 34 years of age, of abandoned character, and took the acid at six P.M., on the 3d of March, thinking that she was three months pregnant, and wishing, she said, to destroy her child. The quantity taken into her mouth was reported to be three drachms, but most of it was spat out. Alkalies and mucilaginous drinks were used, but the burning in the mouth was intense during the night, with restlessness and delirium. The next morning she was brought from the jail, where the acid was taken, to the hospital. Yellow stains were then observed upon the clothing, and the whole inside of the mouth and fauces, so far as could be seen, was of a deep yellow color, the tongue looking as if covered with Indian meal; the respiration being painful, laboured, and stridulous, and speech almost impossible. Extremities cold; countenance of leaden hue; pulse 120, and very small.—For the first four or five days after her admission she suffered from soreness of the mouth and throat, dysphagia, thirst, and salivation, with some vomiting; she also complained of tenderness of the abdomen, but not particularly over the stomach, walking with difficulty and bent much forward; but this is perhaps owing to her having been thrown down and stamped upon, in an affray, on the day on which she took the acid. After the first day or two she was much of her time up and about the ward: at the end of a week she was reported quite comfortable, and having some appetite; and on the 14th of March as she was doing well, she was removed back to the jail, there never having been any fever, but rather a state of depression. On the morning of the 16th she was attacked with cramps in the stomach, and excessive pain and tenderness, which were partially relieved by opiates; on the following morning, however, she was found dead in her cell, with a great quantity of blood about her, and which she had apparently vomited.

On dissection, there was observed great rigidity. Upon the middle of the tongue a large, yellowish, smooth patch. *Œsophagus* healthy for the first two inches; but below this it was

exceedingly soft, of a greenish yellow colour internally, purple externally, and full of coagulated blood. The stomach was in a similar, though much worse state: externally, it had the same purple color, and was universally adherent to the neighbouring parts by recent lymph, except at the left extremities, where there were old and close adhesions to the spleen; internally, it was of a greenish yellow colour, emphysematous, and so perfectly softened and friable, that it could not be separated from the surrounding parts without giving way in every direction; the anterior face being detached from the rest of the organ to a great extent when the abdominal parietes were raised. Cavity filled with recently coagulated blood, and the open orifices of several vessels distinctly seen on inner surface. The intestine contained blood throughout the first two or three feet, but were otherwise sound, as were the other organs, so far as observed. Uterus not gravid.—*Amer. Jour. Med. Sciences* for July 1850.

MISCELLANEOUS.

The Men of Globules.—Six bottles of mysterious globules, diffused in some such vehicle as sugar-of-milk, were prescribed by a homœopathist for a sick child, who was to take the contents of one of the bottles as a daily dose. The young patient, however, unaware of the potent efficacy of the medicine, and led astray, as would appear, by the sweet nature of the contents, emptied the whole six bottles at once, to the great terror of her friends, who sent for the homœopathist, that he might obviate by his toxicological skill the baneful effect of the dangerous dose that had been swallowed. Their minds were soon set at rest, however, and their fears quieted, by the professor confidently assuring them that the accident of swallowing the contents of the six bottles (in place of three of them, which might have proved highly detrimental to the young patient) was very providential; as the contents of each three bottles were antagonistic in their properties, and had thus neutralized each other.

At the present time the globulistic quackery is entering upon a curious

phase of its existence, or rather its decay. Almost every district in London has its homœopathic institution. Broackes and many of his brother globulists,* have turned their back-kitchens into dispensaries; two homœopathic hospitals at least are in course of formation, and we believe one has already commenced operations in a second floor in Golden-square. The gullible public has given its money pretty freely, and there is no dearth either of dupes or fees. We have before us an advertisement respecting the Hahnemann Hospital, containing a goodly show of patrons, presidents, vice-presidents, trustees, treasurers, and managers, and what is more to the purpose, a long list of subscribers. In a few months upwards of three thousand pounds have been collected, so that the believers in this folly are ready to back their opinions with their purses. There is of course no lack of medical renegades, who prostitute the title of M.D.M.R.C.S. and L.S.A. to the furtherance of globulism. We can count in this list no less than eight doctors of medicine of the University of Edinburgh—a proof that Henderson, the homœopathic professor of pathology, is doing his best, in the way of perversion at Edinburgh. Sad spectacle! for a man habitually standing in the presence of the dread changes which disease works upon the human frame, to meet them only with medicinal phantoms and infinitesimalities! to have no hope against cancer and tubercle, lymph, and callus, but in bilionths and decillionths!

But however in names, in men, and in money, globulism is just now extraordinarily successful, to all outward appearance. A closer view shows the feet of clay upon which this monstrous image stands, ready to crack and tumble its carcase to the dust. Homœopathy is now brought face to face with acute disease, and that under the eyes of the public and the profession. We have good reason to know that its most cunning adepts tremble at the ordeal which globulism has reached, and which cannot be avoided, unless they would confess the folly and criminality inherent in the system to their dupes. They must

* As the term homœopathists does not certainly apply to the followers of Hahnemann in the present day, we would propose that they should be called *globulists*, and nothing else, by medical men.

work miracles, or be put to shame; and they feel, alas! that no miracles are forthcoming. The silly enthusiasts whom the professors have converted believe, and will believe, at the risk of their lives; they demand that acute diseases shall be treated, and that hospitals shall be opened; and the renegade medicoes are forced to join in subscriptions for hospitals, which, when opened, must, as they well know, inevitably hasten the destruction of a humbug, only safe while it lurked in the vagueness of chronic disorders, and among the myriad symptoms of hypochondriasis and hysteria. The professors of globulism are uneasy enough at such a state of things. Like the priests of old Baal, they know that in the face of real danger, no answer will follow their invocations, let them call upon their globules and their mock science ever so loudly. These men are everywhere, to escape the coming storm, dividing themselves into two parties, who may be described in the following manner:—One party, like craven knaves, consider how much they may steal from regular medicine, and so mix it up with their pretended homœopathy, in order to save themselves from the disgrace of failure, when something curative really requires to be done. Some vagrant eclectics openly jumble globulism and regular medicine together, and use them like the two figures in a Dutch weather-house—one for fair weather and the other for foul. Others, again, would not for the world give anything but globules; but then these are made to contain infinitesimal doses of such medicine as the bichloride of mercury, arsenic, aconite, morphia, strychnia, and other powerful agents!—Cases are well known in which the most serious results have followed from patients taking a larger number of such globules than have been prescribed.

We know of one veteran vagabond of this class, who when he meets a real case of disease, throws his globules to the winds, and wields his lancet with the energy of a Sangrado. At other times he carries his whole homœopathic pharmacopœia about with him in a good sized snuff-box. Almost daily, cases are coming to light in which, in the face of danger, the globulists have disgracefully fled from their colors, and have either given proper physic themselves, or begged a consultation with

regular medical men, or resigned their cases to them outright. The violence of the hydrophatic treatment is universally admitted by its honest advocates. Its strength is to them its chief virtue. It is as opposite as the poles to globulism in all but its quackery. There is no mistake in its sweating, purging, and diuretic effects: Yet some of the globulists are at the present time striving with might and main to unite globulism and the cold water quackery. We see, Heaven save the mark! that some of the most notorious hydrophatists, such as Gully and Stumme, of Malvern, and McLeod, of Ben Rhydding, are staunch supporters of the 'Hahnemann Hospital.' Quin, it is well known, has publicly advocated the administration of good round doses of camphor, not an inert medicine, in Asiatic cholera. Another renegade, Calvert Holland, advocates the most mongrel treatment. On this point we are happy to quote some facts stated by the editors of the *London Journal of Medicine* in a notice of the said Calvert Holland's empty book on Consumption and Indigestion:—'A lady who lately consulted us produced a pot chiefly consisting of *Barbadoes aloes*, given to her by a London homœopathic accoucher. She designated the drug the *homœopathic paste for consumption*, and took it nightly in *five-grain doses*. A second lady, with pulmonary tubercles, in detailing her medical history, informed us that a homœopathic physician at Brighton, had ordered her to take cod-liver oil! A third lady assured us that a well-known homœopathic doctor had prescribed for her castor oil! These cases, and others of like nature which we could enumerate, as well as the recent tone of homœopathic writings, convincingly testify that homœopathy, as a system of medical practice, is almost extinct—the name and the globules being retained chiefly as topics of discourse and sectarian insignia.' Hahnemann himself was one of this kind. It is notorious that he was detected in fraudulently substituting one medicine for another in the quack nostrum with which he commenced his therapeutic career. Sometimes the globulists commence a case with infinitesimals, and end by heroic doses.

At one of the meetings of the Medical Society of London, we remember Dr.

Risdon Bennett reading two prescriptions for the same case, written by a homœopath within a few days of each other. In the first, the globulist ordered a single drop of laudanum in six ounces of water, two tablespoonfuls being a dose, with the 1-1000th part of a grain of ipecacuanha; in the second he became heroic, and prescribed *five ounces of infusion of senna, half an ounce of tincture of jalap, half an ounce of manna, half an ounce of tincture of cardamoms, and two ounces of sulphate of magnesia, a sixth part to be taken every three hours.* We might multiply cases of this kind, but these are pretty good specimens of homœopathic prescriptions. The consumption of drugs by homœopathic chemists would be an interesting point of inquiry! Another party, the infidels of medicine, call themselves globulists, and give globules *ad libitum*, but without any faith in either infinitesimal or ordinary doses of any physic whatever. They give globules and fluids, as pretended medicines of most wonderful virtues, but these are altogether sham. Like the *British and Foreign Quarterly*, they believe that such disorders as pneumonia and rheumatism do as well without medicine as with it, and they withhold all treatment, except the vile lie of pretence which they administer drops and globules of sugar-and-water, or such like substances. Yet you shall hear none so boastful of the virtues of infinitesimal doses, and of the greatness of Hahnemann, the Father of homœopathic lies, as these sham globulists.—*Lancet.*

The Maha Murree, or Indian Plague.—The last Indian mail brings the intelligence that the Maha Murree, or certain death, has again broken out in the hills of Gurhwal and Kemaon. This disease, which has all the appearance and symptoms of the plague of Turkey, is so infectious, or believed to be so, by the hill tribes, that it used to be the custom to taboo a village in which the disease had shown itself, to draw a cordon around it, beyond which, if any of the unhappy residents of the infected place dared to creep out, he was shot like a mad dog. The hills in which this infection almost always shows itself are those at the foot of the great snowy ranges; it disappears as it

approaches the outer hills towards the plains; such as the Landour and Gagur Ranges. In Gurhwal and Northern Kemaon it takes a most virulent form, and the visitors of Nynce Tal and Almorah should hesitate in making the usual visits to the snowy ranges whilst this plague is said to be raging in the intermediate country, particularly British Gurhwal. The Maha Murree is believed to be highly infectious: it commences with most violent fever, which is soon followed by swellings in the arm-pits and in other parts of the body; it destroys the infected in twenty-four hours generally, though there are some instances where the sufferer has lingered a few hours more. It is supposed that not one in a hundred of those attacked recovers.—*London Med. Gazette.*

The Medical Profession vs. Assurance Offices.—At the Colchester County Court, held yesterday (Monday,) Mr. S. A. Phillbrick, surgeon, obtained a summons against Charles Whetham, Esq., one of the Directors of the National Provident Life Assurance Association, for the recovery of a guinea, as a remuneration for his professional services in supplying a medical certificate of the state of health of a party insuring his life, which the office refused to pay.—*Ipswich Express*, Sept. 17th.

Homœopathy and the Cholera.—In deference to the assertions and large claims of the advocates of homœopathy, and in consideration of the comparatively small success obtained over the mortality of cholera by any method of treatment, the administration of the hospitals Salpêtrière and St. Louis submitted a few cases to the homœopathic mode of practice, but the result did not warrant its continuance. The physicians report that *all* the cases proved fatal.—*L'Union Medicale.*

On the Employment of Nux Vomica in Impotency and spermatorrhœa.—Dr. Duclos states that he has found the exhibition of doses of one-eighth to one-sixth of a grain of the alcoholic extract of nux vomica attended with beneficial results in cases of impotency resulting from long continence, and in those dependant on

nervous excitability. In spermatorrhœa attended with general debility the nuxvomica has produced an improvement of the constitutional condition, with cure of the spermatorrhœa. The dose above named, is given three or four times a day being gradually increased, even to the extent of two or three grains, without injury.—*L'Un. Méd.*

Low Temperature Sustained by Human Beings.—It is stated by Mr. Rae, in his Narrative of the Arctic Expedition, 1846-7, that at Fort Hope, in latitude $66^{\circ} 32'$, and longitude $86^{\circ} 55'$, the lowest temperature experienced during the winter was -47° . This is equal to 79° below the freezing point of water, and 7° below the freezing point of mercury.

British American Journal.

MONTREAL, JANUARY 1, 1851.

The Law of Insanity in Canada.—

The acquittal, on the ground of insanity, at the late Criminal Term in Quebec, of a prisoner named Munro, indicted for the murder of his paramour, while labouring under an attack of Delirium Tremens, naturally prompts an enquiry into the condition of the law respecting insanity in this country, and the subsequent disposal of prisoners, who have committed felonies while suffering under insane impulses. A case more in point, more suggestive of the necessity which exists to have our own legal code amended to meet similar ones, can scarcely be well imagined. It is a subject, which has not engaged the attention of our Legislators, to the extent which it should have done; and while in England and the United States, the criminal law has made ample provision to meet such cases, in prohibiting the possibility of a repetition of the crime by the proper and "safe custody" of such persons in Lunatic Asylums, their proper receptacle, in this country no such

wise or philanthropic precautions have yet been adopted; and if a prisoner is found to have been bereft of reason at the time of commission of the deed, he is acquitted by the Jury's verdict, and let loose again upon society, almost certain to repeat it; or if condemned, and insanity subsequently declares itself, a commutation of punishment is sure to follow, with the consignment of the unfortunate individual to the Penitentiary, there to spend the remainder of his days subject to its rigorous and silent discipline, a discipline the least probable or likely to prove beneficial "to a mind diseased."—Under the latter circumstances, the administration of the law, as it now stands, is a disgrace to humanity, and revolting to every beneficent prompting of our nature. Jones, convicted for the murder of his Corporal, a few years ago, a deed undoubtedly committed under a homicidal impulse, and whose active insanity immediately after his incarceration degenerated into dementia, is now a drivelling idiot in the Penitentiary, where he has remained for the last three or four years, without the benefit of that moral treatment to which he most certainly should have been submitted. Shutts, condemned to death at the last criminal term held in this city, for the murder of Cubis, and whose existing insanity has been established by a commission appointed for the purpose, must have his sentence commuted also; but to the Penitentiary he will also have to go, there to pass the remainder of his natural life, and under circumstances which preclude any recovery of mental power. Irresponsible, however, as are these parties, our criminal law protects society from any repetition of their crimes, but in doing so is utterly regardless of all consequences or results which may attach to the individuals

themselves. They are placed under a hopeless condition as regards their own future restoration to reason. The law is *cruelly* defective here to the unfortunate individuals themselves. They are more than punished for a crime for which they are not responsible, and for which no punishment should have been awarded.

But if, as in Munro's case, a plea of insanity or delirium is successfully maintained at the trial, no alternative but that of acquittal, in this country, is permitted to the jury ; under such circumstances, the prisoner is let loose again upon society, and who can say how soon the act may not be again repeated. Delirium tremens, being the result of continued habits of intemperance, the acquitted prisoner is again subjected to all his previous temptations—the seductive cup will again allure—the intoxicating beverage is again indulged in—potation follows hard upon potation, and reason is again hurled from her throne in another access of furious delirium : and it is not unreasonable to presume, that as under one attack of the kind a homicidal impulse exhibited itself, it may display itself under a second, so the inference is not unstrained that a second victim to unbridled appetite may place him again before a jury of his peers ; and if so arraigned, the previous trial will be pleaded, and successfully too, in mitigation of punishment. In this case then, an injury—a positive and deep one—is inflicted upon society at large, against the possible occurrence of which, it has a right to demand protection. The cases which we have put are pregnant with reflections, and naturally indicate a strong necessity for immediate legislation.

“The earliest mode of proceeding by which the incapacity of *non compos*

mentis to commit crime, seems to have been recognised in English Law, so far as to protect them from punishment, was by granting them the King's Pardon, without any charging of the jury.”* Mr. Stock alludes to several cases in his remarks on this subject, but especially notices one occurring during the reign of Edward the Third. Subsequently, a *certiorari* was sued out to move the process into Chancery, and thereupon to have a pardon ; and still more lately, the incapacity of a prisoner, in England, became, upon his plea of “not guilty,” a special charge to a jury who were called upon to enquire into it, and determine, *in primis*, the validity of the excuse or palliation. But it was not until the year 1800, after the attempt upon the life of George the Third by Hadfield, that a definite statute was enacted upon this subject. Before this period, all insane persons, thus pardoned, were permitted to go at large ; but by the statute enacted on the 28th July, 1800, their liberty was restrained, and the interests of society thus preserved. The position of Canada is, at the present moment, in regard to this matter, exactly what that of England was, during the last century ; and in order to exhibit more forcibly our relative positions, we shall quote from the Act alluded to, as much as is necessary for our purpose, merely remarking that the fourth and last section, having exclusive reference to attempts upon the life of the King or Queen, is inapplicable to us as a colony.

“Whereas persons charged with high treason, murder, or felony, may have been or may be of unsound mind at the time of committing the offence wherewith they may have been or shall be charged, and by reason of such insanity may have been or may be found

* A practical treatise on the law of non compos mentis, or persons of unsound mind, by J. S. Stock, Esq., of the Middle Temple, Barrister at Law.

not guilty of such offence, and it may be dangerous to permit persons so acquitted to go at large :

“Be it therefore enacted, by the King’s Most Excellent Majesty, by and with the advice of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, That in all cases where it shall be given in evidence upon the trial of any person charged with treason, murder, or felony, that such person was insane at the time of the commission of such offence, and such person shall be acquitted, the Jury shall be required to find specially whether such person was insane at the time of the commission of such offence and to declare whether such person was acquitted by them on account of such insanity ; and if they shall find that such person was insane at the time of the committing such offence, the Court before whom such trial shall be had, shall order such person to be kept in strict custody, in such place and in such manner as to the Court shall seem fit, until His Majesty’s pleasure shall be known ; and it shall thereupon be lawful for His Majesty to give such order for the safe custody of such person, during his pleasure, in such place and in such manner as to His Majesty shall seem fit ; and in all cases where any person before the passing of this Act, has been acquitted of any such offences on the ground of insanity at the time of the commission thereof, and has been detained in custody as a dangerous person by order of the Court before whom such person has been tried, and still remains in custody, it shall be lawful for His Majesty to give the like order for the safe custody of such person, during his pleasure, as His Majesty is hereby enabled to give in the cases of persons who shall hereafter be acquitted on the ground of insanity.

II. And be it further enacted, That if any person indicted for any offence, shall be insane, and shall upon arraignment be found so to be by a Jury lawfully empannelled for that purpose, so that such person cannot be tried upon such indictment, or if upon the trial of any person so indicted such person shall appear to the Jury charged with such indictment to be insane, it shall be lawful for the Court before whom any such person shall be brought to be arraigned or tried as aforesaid, to

direct such finding to be recorded, and thereupon to order such person to be kept in strict custody until His Majesty’s pleasure shall be known ; and if any person charged with any offence, shall be brought before any court to be discharged for want of prosecution, and such person shall appear to be insane, it shall be lawful for such Court to order a jury to be empannelled to try the sanity of such person ; and if the jury so empannelled shall find such person to be insane, it shall be lawful for such Court to order such person to be kept in strict custody, in such place and in such manner as to such Court shall seem fit, until His Majesty’s pleasure shall be known ; and in all cases of insanity so found, it shall be lawful for His Majesty to give such order for the safe custody of such person so found to be insane, during his pleasure, in such place and in such manner, as to His Majesty shall seem fit.

III. And, for the better prevention of crimes being committed by persons insane, be it further enacted, That if any person shall be discovered and apprehended under circumstances that denote a derangement of mind, and a purpose of committing some crime, for which, if committed, such person would be liable to be indicted, and any of His Majesty’s Justices of the Peace before whom such person may be brought shall think fit to issue a warrant for committing him or her as a dangerous person suspected to be insane, such cause of commitment being plainly expressed in the warrant, the person so committed shall not be bailed except by two Justices of the Peace, one whereof shall be the Justice who has issued such warrant, or by the Court of General Quarter Sessions, or by one of the Justices of His Majesty’s Courts in *Westminster Hall*, or by the Lord Chancellor, Lord Keeper, or Commissioners of the Great Seal.*

The third clause just quoted was repealed by a subsequent statute—1st Vic. Cap 14.—dated 30th March, 1838. We conceive it unnecessary to quote the preamble of this Bill, but the following clauses as being important to our object

* A practical treatise on the Law concerning lunatics, idiots and persons of insane mind, &c., by Leonard Shelford, Esq., of the Middle Temple, Barrister at Law, London, 1833.

we feel ourselves compelled to subjoin in full :—

“II. And be it enacted, That in all cases where any person shall be in custody at the time of the passing of this Act, under or by virtue of any warrant for commitment made or issued by any of Her Majesty’s Justices of the Peace under the authority of the said hereinbefore recited provisions of the said Act of the thirty-ninth and fortieth years of His late Majesty King George the Third, and hereby repealed, and if at any time after the passing of this Act any person shall be discovered and apprehended under circumstances that denote a derangement of mind and a purpose of committing some crime for which, if committed, such person would be liable to be indicted, it shall and may be lawful for any two Justices of the Peace for the county, city, borough, or place where such person shall be so kept in custody or apprehended to call to their assistance a physician, surgeon, or apothecary, and if upon view and examination of the said person so in custody or apprehended, or from other proof, the said Justices shall be satisfied that such person is insane or a dangerous idiot, the said Justices, if they shall so think fit, by an order under their hands and seals, directed to the keeper of the gaol or house of correction, if in custody at the time of passing this Act, or if hereafter apprehended, to the constable or overseers of the poor of the parish, township, or place where such person shall be apprehended, shall cause the said person to be conveyed to and placed in the County Lunatic Asylum, provided there be one situated within or belonging to the county, in which such person shall be in custody at the time of passing this Act, or shall be hereafter apprehended, and if there be no such asylum, then to some public hospital, or some house duly licensed for the reception of insane persons; and it shall be lawful for the said Justices to inquire into and ascertain, by the best legal evidence that can be procured under the circumstances, of personal legal disability of such insane person or dangerous idiot, the place of the last legal settlement of such person; and it shall and may be lawful for such two Justices to make an order under their hands and seals upon the overseers or church-

wardens of such parish, township, or place where they adjudged him or her to be legally settled, to pay all reasonable charges of examining such person, and conveying him or her to such County Lunatic Asylum, public hospital, or licensed house, and to pay such weekly sum for his or her maintenance in such place of custody as they or any two Justices shall, by writing under their hands, from time to time direct; and where such place of settlement cannot be ascertained, such order shall be made upon the treasurer of the county, city, borough, or place where such person shall have been in custody or apprehended: Provided always, that nothing herein contained shall be construed to extend, to restrain, or prevent any relation or friend from taking such insane person or dangerous idiot under their own care and protection, if he shall enter into sufficient recognizance for his or her peaceable behaviour or safe custody, before two Justices of the Peace, or the Court of Quarter Sessions, or one of the Judges of Her Majesty’s Courts in Westminster Hall: Provided always, that the churchwardens and overseers of the parish in which the Justices shall adjudge any insane person or dangerous idiot to be settled may appeal against any such order: to the next General Quarter Sessions of the Peace, to be holden for the county where such order shall be made, in like manner and under like restrictions and regulations as against any order of removal, giving reasonable notice thereof to the clerk of the peace of the county, riding, or division, or to the town clerk of the city, borough, or place, as the case may be, upon whose rates the burden of maintaining such insane person or dangerous idiot might fall, if such order should be invalid, and such clerk of the peace or town clerk shall be respondent in such appeal, which appeal the Justices of the Peace assembled at the said General Quarter Sessions are hereby authorized and empowered to hear and determine, in the same manner as appeals against orders of removal are now heard and determined.

“III. And be it enacted, That if upon examination it shall appear to the physician, surgeon, or apothecary present at the examination of any person in custody at the time of passing this Act as aforesaid, that he or she is

not an insane person or a dangerous idiot, and that such person may be suffered to go at large with safety, it shall and may be lawful for such medical person and he is hereby required to give a certificate to that effect, signed by him, to the visiting Justices of the gaol or house of correction in which such person is in custody, who are hereby required to transmit the same forthwith to Her Majesty's Principal Secretary of State for the Home Department, who, if he shall so think fit, shall order the liberation of such person from custody.

"IV. And be it enacted. That nothing herein contained, except where otherwise expressly mentioned, shall alter the laws relating to the discharge of persons who may cease to be insane or dangerous idiots from any County Lunatic Asylum, public hospital or house duly licensed for the reception of insane persons, nor authorize the removal by any parish officer of any poor person from such asylum, public hospital, or licensed house, without an order for that purpose made by two Justices of the Peace for the county in which such house shall be situated, after due inquiry into the circumstances of the case, unless such person shall have been discharged as cured."†

Having thus given the essential parts of the Imperial Acts, as far as is necessary to our purpose, we cannot but state our inability to conceive why statutes so beneficent in their objects have not as yet been extended to us. We trust, however, that our remarks will not be without their influence upon those of our Legislators whose eyes they may meet. We have some reason to know that the matter has been brought under the consideration of the Government, and we hope that a ministerial measure will be introduced at the next Session of our Legislature, to ameliorate this condition of matters as respects the insane of this country, so unworthy of the philanthropic progress of the present century.

† Stock's Non Comptes. Op Cit.

The Provincial Medical Schools.—

By a letter received from Toronto since our last, we find we have been inadvertently led into error in assigning to the Toronto School of Medicine (Dr. Rolph's school) the number of 25 students as attending its lectures. The school now numbers 64, of whom 20 are Theological students from Knox's College, who attend the Anatomical and Physiological Lectures, the remaining 44 being Medical students. We are pleased to witness the prosperity which attends this school, and we regret the error into which we were led. The number attending the lectures, is a convincing proof of the value of the instruction received at them. The matriculation list at McGill College having closed on the 23d ult., the Register exhibits the number of 52 students in attendance upon the courses.

The Montreal School of Medicine.—

This school is again proposing to repeat the game which it has been so unsuccessfully playing for the last five years. During that period of time, not one session of the Legislature has passed without petitions from it having been presented, to secure the power of granting Diplomas, which have been as invariably rejected. With a pertinacity worthy of a better cause, it is at its work again, and intends to back its application by the signatures of as many medical practitioners as possible, and probably by those of some who are not so. We hope on this occasion, they will make use of no names without authority—a practice at which it was caught once before, and which at the time we duly exposed. The petition is at the present moment being hawked about the country for signature; and we have been advised of the fact by a letter from a medical gentleman to whom it was presented by

"one of the students of the school," but who, in the politest manner possible, declined all connection. We thus advise the school, that its secret doings have come to light, and at the same time we desire to put our country medical friends on their guard.

☞ *Subscribers for the past and present volumes are respectfully requested to remit at once. In the former case to Mr. J. C. Becket, to close past transactions; in the latter, to Messrs. W. Salter & Co., to liquidate present claims.*

To CORRESPONDENTS.—*Papers have been received from the following gentlemen:—Dr. Von Iffland, Beauport, on Nævi Materni; Dr. Jackson, Quebec, on a case of Scarlatina requiring Tracheotomy; Dr. Jarron, conclusion of paper on the Endemic Diseases of Canada; Mr. Turner, V.S., a paper on Ringbone; Maximum, Minimum and Mean monthly Temperatures for Montreal, during the years 1846, 1847, 1848, 1849 and 1850, by the Rev. G. Botham, D. D. These will appear in our next.*

BOOKS &C. RECEIVED.—*Report of progress of the Geological Survey of Canada. Report of progress for 1848-49 Report of progress for 1849-50.*

METEOROLOGICAL REGISTER at MONTREAL, for the Month of NOV, 1850.

DATE.	THERMOMETER.				BAROMETER.				WIND.			WEATHER.		
	7 A. M.	3 P. M.	10 P. M.	Mean.	7 A. M.	3 P. M.	10 P. M.	Mean.	7 A. M.	3 P. M.	10 P. M.	7 A. M.	3 P. M.	10 P. M.
1	+32	+51	+41	+41.5	29.91	29.85	29.91	29.89	S by W	SW b S	SW b S	Foggy	Fair	Fair
2	+38	+48	+42	+43.	29.82	29.85	29.95	29.96	SW b S	SW b S	S	Foggy	Foggy	Foggy
3	+42	+53	+47	+47.5	29.83	29.83	29.94	29.94	S W	S W	S	Foggy	Foggy	O're'st
4	+44	+49	+45	+46.5	30.	30.	30.03	30.03	W N W	N W	N W	Clo'dy	O're'st	Clo'dy
5	+42	+48	+52	+45.	29.84	29.84	29.75	29.8*	S W	S W	S W	O're'st	Clo'dy	O're'st
6	+61	+49	+38	+50.	29.71	29.72	29.83	29.75	S	S	S	Clo'dy	Rain	Fair
7	+29	+39	+32	+33.5	30.0	30.09	30.15	30.06	N W	N W	N W	Fair	Fair	Fair
8	+28	+44	+58	+36.	30.03	29.82	29.84	29.83	N W	N W	N W	Fair	Clo'dy	Clo'dy
9	+30	+42	+41	+36.	29.82	29.86	29.83	29.88	S S W	S S W	N W	Fair	Fair	O're'st
10	+33	+47	+39	+40.	29.82	29.86	29.87	29.87	W	W	W	Fair	Fair	Fair
11	+35	+51	+41	+43.	29.85	29.76	29.72	29.78	W	S W	S W	Fair	Fair	Fair
12	+34	+42	+38	+38.	29.76	29.68	29.72	29.70	W N W	W N W	W N W	Foggy	Fair	O're'st
13	+35	+38	+36	+36.5	29.77	29.75	29.76	29.76	W N W	N W	N W	Clo'dy	O're'st	Clo'dy
14	+36	+42	+37	+39.	29.	29.81	29.80	29.79	N W	S	S	Clo'dy	Clo'dy	Clo'dy
15	+34	+41	+35	+37.5	29.80	29.71	29.72	29.74	N W	N W	N W	Clo'dy	Fair	Rain
16	+35	+43	+40	+39.	29.76	29.76	29.71	29.74	N W	N W	W N W	Clo'dy	Rain	Foggy
17	+37	+35	+34	+36.	29.75	29.75	29.04	29.24	N E	N E	N E	O're'st	Rain	Rain
18	+34	+33	+31	+33.5	29.82	29.	29.15	29.	N E	N N W	N W	Sleet	Snow	Snow
19	+28	+33	+30	+30.5	29.	29.	29.64	29.40	N W	W	W	Fair	Clo'dy	O're'st
20	+29	+36	+32	+32.5	29.65	29.69	29.	29.66	W	W S W	W S W	Fair	Clo'dy	Clo'dy
21	+34	+35	+28	+34.5	29.52	29.49	29.58	29.53	W S W	W S W	W S W	Snow	O're'st	Snow
22	+23	+31	+29	+27.	29.72	29.79	29.83	29.78	N W	N	N	Fair	Fair	Clo'dy
23	+26	+28	+26	+27.	29.86	29.84	29.82	29.84	N E	N E	N E	O're'st	Clo'dy	O're'st
24	+27	+32	+28	+29.5	29.76	29.72	29.67	29.72	W	N W	N W	Fair	Fair	Clo'dy
25	+30	+36	+31	+33.	29.71	29.72	29.76	29.73	W	W	W	Clo'dy	Clo'dy	Clo'dy
26	+25	+28	+26	+26.5	29.82	29.78	29.82	29.81	W N W	N E	N E	O're'st	O're'st	Snow
27	+26	+30	+31	+28.	29.80	29.65	29.79	29.75	N E	N E	N E	Clo'dy	Rain	O're'st
28	+21	+23	+22	+22.	30.01	29.94	29.73	29.89	N E	N E	N E	O're'st	Rain	Rain
29	+31	+36	+33	+33.5	29.66	29.66	29.67	29.66	E by N	S W	S W	Clo'dy	Foggy	O're'st
30	+32	+34	+33	+33.	29.65	29.68	29.62	29.65	S W	S W	W	Clo'dy	Fair	Clo'dy

Therm { Maximum +53° on the 3rd, at 3 P. M.
 { Minimum, -21° " 29th, at 7 A. M.
 Mean of the Month, +36°

Barom. { Maximum, 30.09 in, on the 7th, at 3 P. M.
 { Minimum, 29.02 " " 18th, at 7 A. M.
 Mean of the Month, 29.746 inches.

MONTHLY METEOROLOGICAL REGISTER, AT E. M. MAGNETICAL OBSERVATORY, TORONTO, O. W. — NOVEMBER, 1850.
Latitude 43° 30' 4" N. Longitude, 79° 21' 5" W. Elevation above Lake Ontario, 103 feet — For the British American Medical and Physical Journal.

Day	Barometer at Temp. of 32°			Temperature of the Air.			Tension of Vapour.			Humidity of the Air.			Wind.			Inch of Rain.	Weather.
	6 A.M.	9 P.M.	10 P.M.	6 A.M.	9 P.M.	10 P.M.	6 A.M.	9 P.M.	10 P.M.	6 A.M.	9 P.M.	10 P.M.	6 A.M.	9 P.M.	10 P.M.		
1	29.720	29.647	29.761	50.1	51.7	46.8	0.287	0.347	0.296	84	86	94	N	E	NE by E	0.170	Generally unclouded; foggy
2	29.803	29.789	29.818	45.9	54.1	47.6	0.297	0.357	0.310	87	87	97	N	E	NE by E	0.170	Generally unclouded; foggy
3	29.837	29.814	29.822	61.2	54.7	47.7	0.379	0.391	0.319	93	93	98	N	E	NE by E	0.170	Generally unclouded; foggy
4	29.734	29.719	29.729	60.0	51.2	46.2	0.383	0.370	0.307	94	94	98	N	E	NE by E	0.170	Generally unclouded; foggy
5	29.695	29.781	29.699	51.2	46.2	40.3	0.378	0.367	0.287	88	88	93	N	E	NE by E	0.201	Overcast; sibir rain and mist am
6	29.772	29.696	29.755	30.0	40.8	31.0	0.169	0.159	0.122	85	85	92	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
7	29.797	29.801	29.811	31.6	43.4	34.0	0.150	0.146	0.125	82	82	84	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
8	29.785	29.801	29.857	30.6	43.4	34.0	0.150	0.146	0.125	82	82	84	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
9	29.790	29.822	29.855	32.4	42.4	30.2	0.162	0.161	0.135	80	80	85	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
10	29.796	29.706	29.681	59.4	46.8	35.7	0.176	0.161	0.170	81	81	78	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
11	29.692	29.588	29.634	51.1	40.6	32.1	0.130	0.132	0.108	80	80	83	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
12	29.681	29.684	29.693	50.3	37.4	30.6	0.129	0.129	0.106	83	83	86	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
13	29.674	29.651	29.683	51.8	40.5	30.6	0.160	0.160	0.131	80	80	80	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
14	29.545	29.473	29.584	50.7	40.5	32.0	0.261	0.255	0.190	89	89	95	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
15	29.672	29.680	29.612	38.1	35.1	35.1	0.141	0.145	0.172	78	84	87	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
16	29.300	29.382	29.326	38.2	37.6	35.9	0.184	0.217	0.171	81	82	80	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
17	29.401	29.359	29.322	45.6	37.0	36.7	0.166	0.211	0.148	87	87	84	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
18	29.374	29.631	29.618	32.2	40.6	36.1	0.136	0.134	0.135	81	81	77	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
19	29.542	29.610	29.708	37.8	36.4	31.4	0.120	0.101	0.110	88	88	90	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
20	29.714	29.721	29.758	19.4	34.2	31.6	0.065	0.088	0.114	69	69	74	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
21	29.722	29.700	29.695	27.3	35.6	32.0	0.133	0.131	0.114	88	88	86	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
22	29.681	29.690	29.631	29.8	38.6	39.0	0.160	0.186	0.182	90	97	83	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
23	29.418	29.447	29.460	38.2	36.3	36.6	0.217	0.202	0.208	89	89	84	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
24	29.507	29.472	29.603	38.3	38.4	38.4	0.202	0.202	0.208	90	90	86	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
25	29.656	29.632	29.466	36.0	37.2	36.1	0.181	0.181	0.170	94	94	97	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
26	29.692	29.612	29.517	35.9	37.0	36.8	0.206	0.206	0.201	90	90	97	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
27	29.698	29.592	29.571	35.9	37.0	36.8	0.206	0.206	0.201	90	90	97	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
28	29.608	29.592	29.571	35.9	37.0	36.8	0.206	0.206	0.201	90	90	97	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
29	29.608	29.592	29.571	35.9	37.0	36.8	0.206	0.206	0.201	90	90	97	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
30	29.608	29.592	29.571	35.9	37.0	36.8	0.206	0.206	0.201	90	90	97	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm
31	29.608	29.592	29.571	35.9	37.0	36.8	0.206	0.206	0.201	90	90	97	N	E	NE by E	0.105	Overcast; fresh fog from 4 pm

Highest Barometer		Lowest do.		Highest obs. Temperature		Lowest do.		Mean Max. Temp.		Mean Min. do.		Greenest Daily Range		Warmest Day		Coldest Day		Warmest hour		Coldest hour		Mean Diurnal Variation			
30.605	29.641	29.630	29.632	52.8	41.1	51.8	37.6	41.1	41.1	37.6	38.7	41.1	37.6	41.1	37.6	41.1	37.6	41.1	37.6	41.1	37.6	41.1	37.6	41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6		41.1	
30.605		29.641		52.8		41.1		41.1		37.6		38.7		41.1		37.6		38.7		41.1		37.6			