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THE MEDICAL TIMES.

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SURGERY.

NEUROMIMESIS.

LECTURE ON THE NERVOUS MIMICRY OF JOINT DISEASES.

By Sir James Paget.

(concluded.)

When you have learnt to feel accurately the heat of a joint, you may safely rely on it for some certainties in diagnosis. A joint that feels all over cold, or cool, or not above its natural temperature, is not an inflamed joint: whatever may be the other signs of inflammation in it, it is not inflamed; you may rely on this. In the hip and shoulder, however, this test of temperature is not easily applicable. The thickness of various textures covering those joints is too great for additional temperature to be transmitted through them. But in the knee and elbow, and other smaller joints, even those of the fingers and of the tarsus and carpus, the test is easily applied and sure; and remember always, in using it, that, in most persons, the front of the knee-joint, and, in a less degree, the back of the elbow, are habitually cool to the touch—cooler than the arm and leg; and that in many the feet are rarely warm in health. These local variations, however, can lead to no confusion if you follow the rule—which, for other reasons as well as this, ought to be never neglected—of comparing every suspected joint with its fellow. Besides, always compare the temperature of the joint with that of the rest of the limb, for the rest of a limb may be, through disease or long defective nutrition, cold; and if one joint in it be always not cold, though it may not be fairly called hot, this may be through its being inflamed. I repeat, then, a joint which is not above its natural temperature is not an inflamed joint. But observe, besides, some rules within this rule.

A joint when first exposed for examination may feel over-warm. This may be due to its having been very warmly wrapped, or thickly covered with water-dressing, or in some other way hindered from cooling to its natural temperature. Wait, therefore, and observe whether, after a few minutes' exposure to cool air, the joint has become of the same temperature as its fellow or as the rest of the limb. If it have, you may be very nearly sure it is not inflamed: or your suspicions that it is inflamed may increase with the time during which its cooling is delayed. Frequently only a part of a joint is: in this case the morbidly high temperature can be felt only over the inflamed part. This limitation of a sign of inflammation which one might suppose easily diffusible is a striking fact. It is the same with the swelling, which, especially in scrofulous inflammations of joints, is often limited to a single portion.

Not rarely, when you feel a joint quite cool, the patient will tell you that it, nevertheless, is at times very hot or burning hot, and that with this heat it swells and becomes red. Such cases are common among those in which the consequence of sprains and other injuries are very prolonged in nervous persons, or even in healthy persons whose joints have been too long treated with cold douches or too long kept at rest. These joints are commonly reported as getting very hot every evening, and as being subject to painful heats, tingling and burning. In any case you may decide that the joint is not inflamed. If it were, it should be over-warm all day and all night. The occasional heat is olny due to flushing, such as some nervous people have in their faces after their meals, or such as women commonly have at the time of ceasing to menstruate. I call it flushing, not blushing, for it is not associated with any mental state; indeed, it may seem strange that, among all the nervous people with joints that are the constant objects of their attention, one never sees blushing of the skin over them when they are being looked at. All such turgescence and transient heat are consistent with complete absence of organic disease. Doubtless the same thing may happen in inflamed parts; they are sometimes hotter than at other times, more swollen and more painful, having periods of exacerbation; but then they are never of natural temperature—they are always more or less too hot. It is very dificrent with the mimicries of inflammation in joints; here the overheat is only at times, at night or at some nearly regular hour, or after exercise or fatigue. A joint which is cold by day and hot by night is not an inflamed joint—that is certain.

The certainty of the diagnosis based on coldness is, if possible, increased by coincident duskiness of the skin—by its having a dull purplish tint which is commonly called blue or a dull pink. Such colours may be seen at joints long inflamed, but in these cases they are associated with over-heat; when they are associated with coldness, they are characteristic of anything rather than inflammation. Besides, with inflammation the colours of over-fullness of blood-vessels are only at the inflamed parts; with congestion in cold nervous joints they are commonly much more widely diffused.

Lastly, as to fever associated with a supposed inflammation of a joint. It may help you to diagnosis in some few cases, chiefly in those in which the pain is very severe, or in which there are other signs like any of those of acute inflammation. For no very acute inflammation of a considerable joint can exist without fever; and therefore, when a patient's general temperature is normal, you may be very doubtful, to say the least, whether an intensely painful joint is inflamed. But the reverse is not true; the temperature may be frequently or habitually high, though a suspected joint be only neuralgic or in some other mimicry of acute disease. For the patient may be tuberculous, or, with some casual illness, may have a high temperature, or he may be recently convalescent from acute fever. Moreover, a very slight degree of inflammation in a joint in a very nervous person may be associated with a disproportionately high general temperature. This is in accordance with a general rule already mentioned—that in those with alert and mobile nervous systems a slight local inflammation may produce or be associated with a great increase of general temperature. In similar persons, fatigue or passing excitement will raise the temperature to 100°, or, I think, to 101°; and in their convalescence from acute illness—a condition in which nervous mimicry, as well as real joint disease, is apt to appear—they have widely variable temperature. You must therefore hold, in a general rule, that, in very nervous persons, the temperature must be studied many times, and with circumspection, before it is counted as an addition to the evidences of their having real joint disease. Within the last few days I have been very nearly deceived in such a case. A gentleman, about thirty, had what he described as frightful paroxysmal pain in one knee—pain such as might have been in the most acute inflammation of the joint; and there were some heat, some swelling, and a general temperature of 101°. These things had "come of themselves" within three or four days, and the patient looked very ill. Of course he was treated cautiously; and all subsided so quickly as to make it sure that no serious, if indeed any, organic disease had existed. It was a nervous mimicry ensuing upon excessive and unsuccessful work.

THERAPEUTICS.

NITRITE OF AMYL.

Having his attention particularly directed to the nitrite of amyl by its effect in a case of angina pectoris, to which it gave immediate relief, Dr. Amez-Droz (*Archives de Physiologie* for September, 1873) was led to study the literature of this subject, and to endeavour to ascertain by experiment the physiological action and therapeutic value of the drug. The article is briefly as follows:

When the vapour of nitrite of amyl is inhaled by man, it produces redness of the face, marked pulsation of the carotid and temporal arteries, occasional palpitation of the heart, sometimes a sensation of vertigo with headache, and an acceleration of the pulse. The cough excited in some cases by its inhalation is evidently due to the irritating effect of the vapour on the bronchial mucous membrane. Although no dangerous toxic results in man have yet been reported, because the feeling of distress and sickness which supervenes almost immediately upon the commencement of the experiment prevents a continuance of the inhalation, such results undoubtedly

may be produced, because we know that it causes death in the lower animals. In these the first effect is great restlessness; the animal sneezes, and struggles to get away; the respiration becomes quickened and fuller, and occasionally stops. These respiratory troubles cannot be considered as a specific symptom of the intoxication by nitrite of amyl; they are more probably due to direct irritation of the bronchial passages: besides, the injection of any liquid whatever into a vein generally produces a sense of oppression, and acceleration of the respiratory movements. The action of the heart becomes equably increased, and the thoracic wall is visibly moved by its strong pulsations. Following this are alternating tonic and clonic contractions in the extremities, and even in the face; then opisthotonos, shivering, involuntary excretions, vomiting, and coma. Post-mortem results are not very marked, except the dark colour of the blood, and the dilated engorged heart; death being produced, apparently, by paralysis of this organ.

The method adopted for the administration of the nitrite of amyl is of great importance. The means by which the toxic effect is produced most quickly is by injection into a vein; the symptoms show themselves immediately, and rapidly pass off. It is surprising to note the amount of urine passed by the animal immediately after such an injection, although the bladder may seem to have been completely emptied but a few moments before; this occurs with each injection. It would have been of interest had a chemical analysis of this urine been made; but this was, unfortunately, omitted. By inhalation death can be produced by a comparatively smaller amount; though the symptoms are not so marked, and the inhalation must be continued for some time in order to produce external manifestations. By hypodermic injection the substance reaches the blood so slowly that it produces but little effect, the elimination taking place so rapidly that there is not at any time a sufficient quantity in the organism to produce the characteristic symptoms. As for the digestive tube, it seems to possess no decided advantages, but to be on about the same footing as the subcutaneous injection. The administration by inhalation being more energetic, and at the same time watched with facility, it is natural that physicians should have unanimously preferred this to its internal exhibition, which has been abandoned. Following the administration of the nitrite of amyl, there is a marked decrease in the intervascular pressure, as shown by the manometer in all the experiments. There is also a constant dilatation of the capillaries, or, more properly, the fine arterial ramifications, which was not seen in the fine venules, and was but partially found in the capillary net-work proper.

This dilatation is evident soon after the inhalation is commenced, increases sometimes to double the calibre of the vessel, and, after a certain time (fifteen to twenty minutes), diminishes again, whether the inhalation is continued or not. This contraction continues until the vessel is smaller than before the inhalation. If the experiment is repeated, the phenomena are reproduced, but not rapidly. There is also a constant slowing of the capillary circulation, which follows the dilatation, and may be due to the lessening of the pressure. During the muscular spasms of the animal, the dilated vessels become momentarily smaller, and the circulation more rapid; but when the animal becomes quiet the effect of the nitrite of amyl is re-established.

The lowering of the blood-pressure and the capillary dilatation could only be produced simultaneously by an intervention of the vaso-motor nervous system, central or peripheral, or by automatic changes in the walls of the vessels. A weakening of the heart's action cannot be considered as the cause, for that alone would not produce capillary dilatation: this must therefore precede the lowering of the tension, which would be the natural consequence of such dilatation.

A toxic effect upon the vaso-motor centres in the medulla would naturally appear to be the explanation of these phenomena, because direct or reflex irritation of that ganglion produces a diminution of the tonicity of the walls of the vessels. The nitrite of amyl is able to act in two ways upon the vaso-motor nervous centre: either by being brought by the blood directly in contact with that important organ, or by reflex action from irritation of the peripheral nerves. The limited extent of this nervous centre, and the small amount of blood conveyed to it, exclude the first hypothesis, while it is easily seen that by irritation of the peripheral ramifications of the pneumogastric, or some other nerve, the nitrite of amyl may produce a reflex irritation of the vaso-motor centres, and hence a diminution of the tonicity of the vascular walls. Two alternatives remain: either that the peripheral extremities of the vaso-motor nerves are affected, or the intimate muscular fibre of the vessels; but, as this leads us to the vexed question of muscular irritability, which we prefer not to discuss, we will merely state the fact that under the influence of nitrite of amyl constant dilatation of the pupils does not occur, which demolishes the theory of Brunton, who argued that from this dilatation we might infer a similar action in all the unstriped muscular fibres. Let it be the one or the other, the blood is really the irritating medium; and, rather than admit a direct action of the nitrite of amyl, which is not probable, we are disposed to take into consideration its chemical effect.

We know that it acts energetically in preventing the oxidation of bodies, and particularly that of the blood, also interfering with the elimination of its carbonic acid. This is corroberated by the post-mortem appearance of the heart and the arteries, which are filled with very dark blood. In conformity with the theories now generally admitted, this blood charged with carbonic acid, by strongly irritating the peripheral vaso-motor nervous filaments or the muscular fibres themselves, might rapidly induce a condition of paralysis leading to dilatation. In company with a certain distinguished physiologist, we adopt the theory that there are two species of muscular fibres in the walls of the vessels. The nitrite of amyl produces an irritation of those fibres which preside over dilatation, while those that govern contraction are unaffected by it.

The acceleration of the heart's action depends upon the capillary dilatation. In those cases where it is very marked, as after a large injection into a vein, it is possible that the ganglia which give to the heart is automatic motion are also affected by it; and, if it be pushed too far, death may supervene from paralysis of the heart.

The therapeutic employment of the nitrite of amyl is based upon these facts, and is particularly indicated where there is probable spasmodic contraction of the capillaries. If it has not always answered to the expectations of those who have used it, it is because it has often been improperly employed. Resting on a physiological basis so clearly defined, the new remedy holds an elevated position at the side of digitalis; and we hope that new experiments will soon be made to determine under what circumstances the physician may employ it with success, so as to contribute towards obtaining for it the right of introduction into the Materia Medica.—[Phil. Med. Times.

SURGERY.

ABSCESS OF THE LARYNX SIMULATING CROUP.

Dr. William Stephenson, narrates (*Edin. Med. Journ.*, October), 1873, six cases of suppuration in the neighbourhood of the larynx; three belonging to Dr. Stephenson, one to Rilliet and Barthez, and two to Dr. Parry (*Philadelphia Med. Times*, June 14, 1873). All the patients were children; in age varying between nine weeks and four years and a half. The most striking symptoms are those present in all cases of acute glottidean obstruction—laboured stridulous breathing and hoarse cough. Hence the disease in question strongly resembles croup. Yet in laryngeal abscess these glottidean symptoms are not usually so rapid in development, and in reaching the point of suffocation, as is the case with true croup. In one child laryngeal dyspnœa lasted two weeks. Usually the patient breathes most easily in an erect posture. Besides dyspnœa, dysphagia was present in all cases but one; this is a symptom which recalls retropharyngeal abscess. But the dysphagia does not seem to have been so great in the laryngeal as it is the pharyngeal abscess; he finds no mention of return of fluids through the nose. Sooner or later, a deep-seated swelling may be detected in front, or at the side of thyroid cartilage. When this is opened, pus escapes. At *post mortem* examinations, pus was found spreading upwards along one or both sides of the thyroid cartilage to the parts above the rima glottidis. In four cases, the suppuration about the larynx was preceded by inflammation of the lymphatic glands under the jaw and down the neck; in two cases it is mentioned whether these glands were inflamed or not. The lymphadenitis in one child was secondary to scarlet fever, in another to small-pox, in a third to erysipelas, and in one was idiopathic. In this respect also laryngeal abscess resembles retropharyngeal abscess, which is probably due to a retropharyngeal lymphadenitis, when not due to disease of the vertebræ. The treatment is obvious, to open the abscess as soon as it can be detected in the neck. In three patients this was done, two recovered and one died.

THE TREATMENT OF NÆVI BY VACCINATION.

M. Marjolin recently advised at the Society of Surgery of Paris that the treatment of erectile vascular tumours in children, whatever their seat, should be commenced by vaccination. M. Blot *(Gazette des Hôpitaux*, Oct. 8*)*, calls this in question. He thinks vascular spots have been confounded with erectile tumours. Vaccination may cure these marks, but is powerless against tumours. M. Tillaux is of opinion that it is capable of curing the tumours also; to operate on the surface of the skin is not sufficient in such cases, the tumour must be traversed by threads impregnated with vaccine matter. He cured lately in this way at the Lariboisière an erectile tumour of the size of an almond. M. Sée observed that *not the summit but the base of the tumour* should be vaccinated, and that it should be surrounded with vaccinal punctures. For a tumour of 2 centimètres thirty or forty subcutaneous punctures should be made. When a child has many such tumours, all should be treated, or the one neglected will be apt to undergo rapid development. M. Chassaignac has seen the 'chaplet of vaccinations' twice fail completely. He fears erysipelas and troublesome hæmorrhage, and thinks it better to adopt decisive measures. M. Tanner and M. Guérrot spoke of the occasional occurrence in newborn children of vascular points, which disappear if left alone, but which, if treated by cauterisation, &c., leave the cicatrix.

COMPRESSION AS A MEANS OF PREVENTING HEMORRHAGE.

Mr. George W. Callender (*British Medical Journal*, November 1, 1873) thinks there are some conditions in which the use of M. Esmarch's plan for the prevention of hemorrhage during operations by encircling the limb or part with an elastic bandage is not desirable. Cases where there is any suspicion of local vein disease are of this class; so, too, are cases in which primary amputation is required for the crushing of tissues, as in such the torn veins are closed with clots which might possibly be displaced by the compressing bandage, and so pass into the larger vessels, causing embolism; and so also are cases of gangrene or of rapidly extending cellular inflammation. The expectation that the compression might prevent pain has been tested and has failed, but there is no reason to suppose that it engenders risk of the after-sloughing of parts, as of the skin-flaps after amputations. It may be serviceable in quite another direction,—as a compress in the immediate treatment of poisoned wounds. Dr. W. R. Kynsey reports (*Irish Hospital Gazette*, November 15, 1873) three cases in which this method was employed with great success: one of necrosis of tibia, one of amputation of a toe, and an excision of the elbow. There was no loss of blood, no necessity for the use of a sponge, and each structure before division could be easily recognized.

Dr. W. Thomson reports a case of amputation of the hand where the best possible results were obtained by the use of compression.

ON THE ELASTIC LIGATURE.

By Professor Dittel of Vienna.

In dividing or entirely removing parts of the human body, there has been a general concurrence among educated surgeons as to the use of the knife; for, with this instrument in his hand, the surgeon can determine on his course of action, while at any moment he can give it the direction in which his object may be best attained. The knife will indeed always remain the established instrument, when *arte-en-flèche*, the écraseur, and the constrictor have long belonged to the class of operative measures laid at rest in the history of surgery.

And yet the surgeon is sometimes placed in circumstances in which he prefers a bloodless proceeding to the making of a wound; for example, when he has to undertake operations in cavities and canals which are out of sight, or which are so narrow that it is extremely difficult, if not impossible, to use cutting instruments within them, or when he feels uncertain whether he may be able to tie the bleeding vessels (as in fistulæ situated high up). In other cases, he will desire to avoid hæmorrhage and the formation of large wounds in children or in old persons.

For a long time, in common with many other surgeons, I have removed nævi in children through the induction of artificial gangrene, by introducing insect-pins through the skin behind the vascular growth, fastening them all round with strong waxed threads, and strangulating the base thus, as it were, artificially produced. Around the *single needles* oval or *figure-of-eight* turns were thus made, so as to compress the vessels leading to the part, and produce gangrenous destruction of the tissues by arresting its nutrition.

In November, 1872, I was consulted by a rickety woman, who had with her her first child, five months old. It had, on its right temporal region, a roundish vascular growth, having a base from 2 to 2½ centimetres (about four-fifths of an inch to an inch) in diameter. I carried a strong insect pin through the base, and also two others, one on each side—three pins in all being thus introduced through the tumour—and over these I twisted turns of waxed thread in the way described above. As usual, I had to correct the shape of many pins which had become bent, before the affair was in the state which was desired. After some days, the circular ligature had cut into the part, and lay, with the needles, imbedded in the suppurating furrow. I should now have drawn the ligature tighter, to make the falling-off of the tumour more sure. There then occurred to me the history of a girl, aged eleven, who had fallen a victim to the refined wickedness or the extreme carelessness of an unkind stepmother. This child, Marie Kramer, was admitted into hospital on March 5, 1872. She had an extremely neglected appearance. Her hair, dirty and full of vermin, was fastened in a net; her face was pale, and her look timid. She answered questions imperfectly and with hesitation, manifesting, evidently, that she felt herself in fear. Her statement that she had not removed her hair-net for about a fortnight, in consequence of the order of her mother, was not absolutely believed. As she complained of head ache, the head was more carefully examined; and I found, in the part corresponding to the edge of the net, a suppurating furrow, at the bottom of which, after carefully washing away the purulent scabs, I discovered the fine elastic thread with which the hair-net had been fastened. This thread was visible in some parts; in others it was deeply imbedded and overgrown with granulations; and in some parts it lay deep in the corroded bones, especially the occipital and right parietal bones, where it had penetrated as far as the inner table. Although the furrow very soon granulated under ordinary treatment, symptoms of meningitis appeared, and she died on March 21.

The necropsy showed not only a high degree of *general anæmia and meningitis*, but also sloughing of the dura mater at the points where the loss of substance in the bone was greatest. The furrow in the soft parts corresponded with a furrow in the bone below the occipital tuberosity, reaching on each side over the tuberosities of the frontal bone, and thus forming a complete circular furrow in the skull. The furrow formed an almost complete chasm in the bones, so that the portion of skull lying above the furrow was connected with the bones below it only by means of remaining bridges, the whole length of which was ten or twelve centimètres—the circumference of the head at the part being forty-two centimètres.

From this act of base wickedness (for I found on inquiry, that *the stepmother had not allowed* the child to loosen the hair-net), I learned that an elastic cord is excellent for use in the division of tissues. And now, instead of tightening the thread in the case of my little patient above-mentioned, I applied a caoutchouc drainage tube all round the pins. Eight days later the mother brought in the child, which had borne this ligature much more easily than the thread. The vascular growth had fallen off; and in its place was a healthy granulating surface, the circumference of which was already beginning to be covered with a cicatricial membrane. This result led me to make further researches with the drainage-tubes; and I have since then used them in the treatment of nævus, fistula ani, prolapsus ani, sinuses, cancer of the breast, and in the *ligature* of arteries.

The proceding is easy, but it requires a certain care and precision, which may soon be acquired by patience and attention. The operator must avoid giving unnecessary pain through pulling the cord too tight and dragging on the part, by having the part to be tied supported or held up by an assistant. The ligature must, of course, be drawn tight, and tied with two knots. The pain produced by the tying is altogether not great, in many cases very trifling, and scarcely ever lasts more than an hour. It is self-evident that the depth of the furrow produced depends on the degree to which the cord is tightened, and on the resistance of the tissues. It is probable that the *ligature* may be applied less tightly than I have done from fear of failure, as the pressure is continuous until the elastic cord has regained its

former length. The division of the parts is effected by the continuous pressure of the cord, which compresses the vessels and lymphatics until the vessels are plugged, and the access of nutritive material is completely interrupted. The substance of India-rubber has the peculiarity of not producing suppuration; and hence, while the compressed parts disappear, a granulating furrow is left, and after the part has fallen off, a healthy luxuriant granulating surface remains. As the tied parts fall off, the ligature springs away from the granulations. The ligature then forms a closed ring, aperture of which is so narrow that a probe or needle can scarcely enter it. The process of ligature or division lasts from three to fifteen days, according to the thickness of the pedicle and the density of the tissues; in a case of cancer of the breast, the duration of treatment was fifteen days. I have never detected febrile symptoms, even when the surface was extensive and the pedicle broad.

The mode of proceeding I have varied according to the peculiarities of the task to be performed.

1. In nævus, after transfixing it with needles as for ordinary ligature, I have the tumour fixed by an assistant during the tying. A single circular ligature is sufficient. In the two cases in which I used this treatment, the nævus fell off in eight days.

2. In fistula ani or sinuses about the rectum, the elastic ligature has especial advantages where the inner opening of the fistula lies high up or the sinus extends far. In the case of sinus, an inner opening (into the rectum) is first made by means of a trocar. The trocar being withdrawn, the elastic thread is introduced through the rectum. This proceeding is rendered more easy by first introducing a metalic thread into the rectum through the canula, seizing it with the finger or forceps, drawing it through the anus, and removing the canula. The outer end of the wire is now fastened to the small elastic tubing by means of a waxed thread. In this way the elastic cord is very easily drawn through, if the index finger of the left hand can be passed up the rectum as far as the opening. Both ends of the ligature are drawn upon, and tied rather tight. The bridge of intestine with the sphincter is generally cut through in three or four days, and the patient finds the ligature, contracted into a ring, lying in his bed. In complete fistula ani, the metal wire is carried into the intestine along the groove of a director, and the use of the trocar is unnecessary.

3. In prolapsus ani, the protruding fold is seized with hooks or polypus-forceps, as for the application of the ordinary ligature, and drawn down a little. In order that the fold may not escape from the forceps while the ligature is being applied, an assistant must press against the fold after it is seized, a second must stretch the cord, and a third must fix between his fingers a small portion of the cord corresponding to the fold, so that it remains only for the operator to tie the ligature. The ligature falls off in three or four days.

4. In sinuses I have used the elastic ligature many times; and will briefly relate the following case. Herr Sch., residing in Odeonstrasse, aged twenty-two, very anæmic, had been suffering twelve weeks from inflammation of the left inguinal glands, following typhus. On Dec. 5, 1872, in consultation with his ordinary doctor, Dr. Humburger, I opened an abscess; and on December 7, as the glands were greatly swollen and suppuration had extended down to their lower border, I repeated the operation. There remained a sinus passing below the glands for about two inches. On December 25 I introduced through the sinus a ligature which included the superjacent skin and all the glands. On the second day, the portion of the bridge of skin that was left was only two lines long, the swelling of the glands was reduced, and healthy granulations were present. The fever disappeared; the ligature fell off on the sixth day. The patient completely recovered.

In a second operation in which I applied the elastic ligature, the bridge of skin was four inches long. The result was equally favourable.

5. In tumours, the elastic ligature has its application when they are pedunculated, or when they can be isolated, or when it is not possible or necessary to save the skin. It is thus inapplicable in diffuse infiltration. I have had only one opportunity of applying the elastic ligature to a tumour. The patient was Frau H., aged seventy-four, and at her age neither I nor another surgeon would have undertaken the risk of a bloody operation. But, having already ascertained that the elastic ligature did not produce any fever, and as the old lady earnestly desired that the tumour—a fibrous cancer of the right breast—should be removed, I concluded to make this first attempt. The cancer had at its base a vertical diameter of about four inches, and a transverse diameter of five inches, and was movable. I passed a Fleurand's trocar through, beneath the tumour, in the direction of the vertical diameter; and, having withdrawn the trocar I introduced through the canula two waxed threads, and by means of them drew through two pieces of small India-rubber tubing; the canula was then withdrawn, leaving the tubes. I now, while an assistant drew forward the tumour, embraced each half in the corresponding portion of tube, and tied the ends of the tubing firmly in a double knot. This was done in the outpatient department on January 9, 1873. On the second day I had the patient taken into ward no. 81, as she was rather anxious on account of some pain. The furrow procured by the ligature became deeper daily before our eyes, leaving a granulating surface while the tumour correspondingly collapsed, sloughed, and fell off on the tenth day. During the whole time the patient had no fever, only an increase of thirst on the eighth day. The old lady was right well pleased with the result.

6. I have applied the elastic ligature to arteries in the following cases.

a To the popliteal artery, on the occasion of amputating the left thigh after Gritti's method. The ligature was thrown off on the sixteenth day.

b. To the anterior tibial artery in two cases of amputation of the left leg, the ligature falling off on the seventh day: and once in a Pirogoff's amputation.

c. To small branches of the anterior and posterior tibial and peroneal arteries. I have thus ascertained, that by means of the elastic ligature the flow of blood from the divided arteries may be completely arrested and their final closure perfectly attained; and further, that this ligature does not provoke suppuration. But with regard to the question whether it may be retained and encapsuled without mischief, made no experiments. In the cases in which I applied it, the wounds were not closed, except in the Pirogoff's operation, where the ligature was soon thrown off.

The mode of applying the ligature to arteries requires some improvement. I have so far modified it, that the elastic thread is first applied over the end of the catch-forceps, and when it is tied, is pushed from the instrument by an assistant, with the nail of his forefinger. The ligature then springs over the artery that is held; but sometimes it misses at first. It is probable that this ligature does not require to be tied very tight, but only just so much as is sufficient to compress the lumen of the artery, so as to allow the formation of a plug, and its organisation and definite union with the walls of the vessel, so as to completely close the artery. That the ligature remained sixteen days in the case of Gritti's operation, must be ascribed to the fact that I connected two ligatures one with the other, so that they held on like the links of a chain. It was interesting to see the two mouths of the ends of the tube projecting from the granulations, without any trace of pus around them.

MEDICAL ASSOCIATION OF LEEDS AND GRENVILLE.

In answer to a special invitation to a number of medical men of Leeds and Grenville, a meeting took place in the Hall of the Market House, Brockville, on the 20th inst., for the purpose of forming a Medical Association in these United Counties, for the object of mutual interchange of thought on subjects of Professional interest. Dr. Morden, of Brockville, was unanimously voted to the chair, and Dr. Elkington to act as Secretary.

The Secretary having read the "Amendment to the Medical Bill," Dr. Addison was called upon to read a paper, which he had prepared on the subject of the Bill, which occasioned some considerable discussion pro and con, the chairman more especially advocating the "restrictive Clauses," and Dr. Lauder, of Frankville, opposing them in a powerful appeal. The desirability of such an Association having been proposed as involving interests highly important to the profession in these Counties and to the public, Dr. Morden was unanimously chosen President, Dr. Addison, first Vice President; Dr. Wallace, second Vice Presiden; Dr. Elkington, Secretary, and Dr. J. E. Brouse, Treasurer.

Dr. Addison then offered a resolution disapproving of the clause of the proposed Bill the object of which is to impose an annual tax upon the medical men of the Province, which being opposed was, for the time, withdrawn, and is to be taken up at the first regular meeting of the Association which is to be held on January the 9th 1874, at one o'clock, in the Victoria Hall, Brockville.

THE CANADIAN MEDICAL TIMES

A WEEKLY JOURNAL OF

MEDICAL SCIENCE, NEWS, AND POLITICS

KINGSTON, SATURDAY, DECEMBER 29, 1873.

TO CORRESPONDENTS.

Communications and reports solicited. Correspondents must accompany letters, if intended to be printed anonymously, with their proper signature, as a guarantee of good faith.

TERMS OF PUBLICATION.

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REMITTANCES.

Gentlemen who have not sent on their subscriptions for the MEDICAL TIMES are requested to remit One Dollar for the current six months without further delay. The system of advance payments must necessarily be adhered to.

The publisher regrets to have to make the announcement that with this issue of the journal the publication of THE CANADIAN MEDICAL TIMES will cease. The experiment of a weekly medical journal, hitherto untried in Canada, has met with a certain amount of success and encouragement; but not with sufficient to warrant its continuance in the face of the expense and large amount of labour involved in getting out the paper from week to week. We have to thank those kind friends who have given their countenance to this venture: and to those who are still indebted for their six months' subscription, we would remark that a speedy remittance of the sum will be highly esteemed.

PRIVATE PRACTICE AS A FIELD FOR CLINICAL OBSERVATION.

In that model address with which Mr. Prescott Hewett opened the Clinical Society last year, he referred to the importance of the opportunities for clinical observation enjoyed by private practitioners, expressing his conviction that good, sound, useful work is to be done clinically in private practice. "Nay more," he said; "if rightly viewed and rightly used, the clinical results to be obtained in private practice are, I think, in many respects, of much greater value than those which can generally be obtained in our hospitals." We ourselves have often remarked on the advantage enjoyed by the private practitioner, at the same time that we have pointed out some of the disadvantages under which he labours. It would neither suit him nor his patients to make an ostentatious note of all symptoms and of all the weak points in family history so far as it is known to the patient or to be gathered in taking the history of any individual illness. A patient goes to a hospital or to a consulting practitioner expecting to be completely overhauled, and indeed feels a certain disappointment if he is not minutely examined. But, as a general rule, in private practice, patients do not like inquisitorial investigations into their health; they like to be cured with the minimum amount of examination, and have a notion that the doctor who can divine their complaint with the least amount of cross questioning is the shrewdest man. Not only is slight examination agreeable to many patients, but it is sufficient to many practitioners, who have either not the leisure or the taste for going deeply into the cases which they have to treat. Nevertheless, it remains true that private practice affords a field for a much more continuous and minute observation of cases than either hospital or consulting practice, and that with a little method this field can be utilised by the practitioner without any serious annoyance to his patients or loss of time to himself, and with the advantage of giving to his work a far more scientific and accurate character than it can possess if done in a slipshod way. If we are asked for illustrations of the kind of clinical observations that might be made without fussy minuteness, we should refer our readers to the address which we have already characterised. Of course in every line of the account of the several groups of cases detailed by Mr. Prescott Hewett there is apparent the high aptitude for seeing and comparing and classifying clinical facts—an aptitude which does not reside in all medical minds. But there is far more of it in most practitioners than is used, and there would be still more if they were careful to exercise the gift that is in them.

Two or three important advantages would accrue if private practitioners would make use of their great opportunities of clinical observation. We should have large additions to our knowledge of the relation of diseases both to given constitutions and to each other. We should gain more accurate ideas of the importance of the element of time in diseased processes. We should arrive at a sounder knowledge of what drugs can do and cannot do, and of the value of other agencies in the treatment of disease. Finally, we should be furnished with data for a more favourable view of many cases than is apt to be taken by the consulting class of practitioners, who are too pathological in their bias. The corrections of a too refined diagnosis and prognosis which are made by events and the process of time would make a volume of the deepest interest. Though we boast of having got rid of the idea of disease being an entity, we are still the victims of it, and see in many processes of slow change too much of the disease element and too little of the conservative one. The slight peg upon which some men will hang a diagnosis of grave disease is wonderful. Correspondingly so is the complacency with which they will give up treatment and resign a patient to the processes of degeneration of which they may see the first steps. Between these first steps and the last, long years of useful, perhaps historical, life may intervene. Such a tendency is too apparent in many of the best physicians. The error is a great one, and the correction of it will come largely from a higher style of general practice. General practitioners will see that many of their patients with grave symptoms and very faulty constitutions take fresh starts in health, and that death is determined not so much by the occurrence of definite lesions as by the exhaustion of a certain reserve of force and health, which exhaustion may be obviated to a large extent by care and wisdom on the part of the patient and his medical attendant. Such observations are clearly possible only to those who can see patients and families over extended periods and in every variety of circumstances in other words, only to the general practitioner.—[Lancet.

HONOURS TO MEDICAL MEN IN THE COLONIES.

The following letter appears in the London Lancet:—

Sir,—It has often struck me as curious that some of the eminent medical men in our colonies have never received a small share of the distinctions conferred upon their fellow-colonists who have made politics or law their sphere. In the only colony where I have a knowledge of the works of some of the medical men—namely, the Dominion of Canada, I know several who have devoted thirty or forty years of their lives to the spread of medical knoledge and to the establishment of medical institutions in the country, thereby benefiting their fellow-creatures in the country to an incalculable extent. Some of these gentlemen have also obtained deservedly widespread reputations in Canada for their skill in the various branches of their profession. A few of the same honours from time to time conferred on their brethren in England would be a graceful and kindly recognition, on the part of the mother country, of well-earned reputation and years of devotion to the spread or a noble profession.

I am, Sir, yours truly,

MEDICAL STAFF.

Tonghoo, Burmah, Oct. 12th, 1873.

According to the statistics published by a Russian journal, there exists but one medical man in Russia for 14,116 inhabitants, whilst the proportion in Prussia is one to 3230, in Austria one to 4355, and in Hungary one to 5492. The total number of medical students in Russia is stated to be 1922, whilst in Germany it amounted to 3978, during the half-yearly term of last winter.

The mortality in some parts of the Punjaub has lately been enormously high. In Faridabad the death-rate reached 260 per 1000, while at Riwari it was 178 per 1000. The prevailing form of sickness and the principal cause of death is diarrhœa, in many cases resembling cholera. In consequence of the recent floods, many of the village wells had become grossly contaminated with the filth washed into them. Damaged grain was also eaten by the poor.

The Italian journals relate that a vice-professor of the Faculty of Medicine of Naples, having asked permission of the Faculty to open a course of homœopathy, received the following answer:—"The Faculty could not grant the authorization, seeing that rational medicine, which is taught on the basis of natural sciences, excludes allopathy as well as homœopathy, and, indeed, all absolute systems of medicine." This is the first time, observes Il Morgagni, that an Italian Faculty has officially declared itself the representative of a rational medicine based on the objective study of nature, and has withdrawn itself from the two systems now in vogue.

PRACTICAL MEDICINE.

DIRECT EXAMINATION OF THE URETERS.

There has been a case in the Pennsylvania hospital for some time past, the diagnosis of which has been somewhat obscure, and which has been cleared up by a comparatively novel operation, which in doubtful cases may prove of considerable value.

This patient was a jeweller, aged 26, in the month of August last, was seized in the right iliac region with intense pain, which was at first constant, but afterwards intermittent: it was always referred to the same locality. The suffering has been at times so great that large doses of morphia hypodermically have failed to give relief, and the patient has been kept often for hours under the influence of ether. Obstinate constipation of the bowels, with pain in the iliac region, [illegible] suppression of urine, without fever or any [illegible]hance, have been the prominent gastric disturbances. The most active purgatives and enormous enemata have failed to produce any action of the bowels, except at long intervals, and then the discharges have been very slight.

The abdomen on examination did not at any time show the least swelling or evidence of inflammation; the right iliac region was very sensitive, and deep pressure produced intense pain. An enlargement, which was apparently the seat of the trouble and was about the size of a pigeon's egg, could be felt deeply situated. A finger passed into the rectum did not reach the enlargement. Whether the mass was a calculus in the ureter, or some impaction of the bowel, or tumour pressing on the ureter, was not determined.

November 21.—The bowels were well cleaned by a large dose of oil, followed by a stimulating enema, as it was determined to explore the rectum by the introduction of the entire hand into the gut.

After complete anæsthesia, Dr. Morton gradually dilated the anus with the fingers of the right hand; the parts quickly yielded, and the hand and forearm were readily carried into the bowel. The line of the ureter and the region of the kidneys were found normal; the aorta and the vessels were readily distinguished, and it was definitely ascertained that no calculus existed, and that the pain was either simply neuralgic, or was dependent upon a mass of hardened fæces, which came away just before the etherization. The patient had no control over the bowel for two or three days after the operation, but on the fifth day the sphincter resumed entire control over the anus. Several large stools were passed directly after the examination.

November 27.—Patient discharged quite well.

In many cases of doubtful diagnosis in abdominal tumours, aneurism, etc., this method of rectal examination might be of great value, while we have exhibited in this case the wonderful dilatability of the rectum without any ill effect upon the sphincters.—*Philadelphia Med. Times.*

EARTH-POISONING.

The following observations appear in the *Comptes Rendus* for November 3. There are some facts which seem to show vegetal putrefaction is not the only factor in production of malaria, but there is a simultaneous influence of the soil. Whatever the degree of corruption of stagnant water, the danger from it is sometimes less than that from the disappearance of this water, leaving the ground bare.

When the long droughts of 1781 had diminished the level of the Seine water, and caused putrefaction of a great number of plants which exhaled a fetid odour beyond the river banks, intermittent fever did not appear among the inhabitants about the river (though many suffered otherwise from drinking the water). On the other hand, such maladies did appear with great frequency among the Parisian population in 1811 and 1840, at which times extensive earthworks were undertaken in digging the canal St. Martin and constructing fortifications. Here the only apparent cause was emanation from the soil.

Examples have been cited of individuals being affected by palustrian intoxication from having drunk marshy water, and it has been inferred that vegetal putrefaction to produce fever. Having examined these observations, and after personal experience in Italy and Algeria, M. Colin is led to deny the febrigenous action of such drinking, and he affirms that marshy water has not the specific action of atmospheric palustrian misama; it only acts in the development of the intoxication, as one of the series of causes which diminishes the resistance of the system to morbid influences.

These facts he considers important with reference to the direction of research in order to ascertain the nature of the germ of intermittent fever. This germ has been sought specially in the atmosphere of marshes, where certainly it exists at its maximum, the gases hitherto discovered in this atmosphere not having febrigenous force themselves, the organic matter found abundantly in them has been specially incriminated. Now, as the emanations of virgin soil newly cleared also produce fevers, it is probable that the greater part of the organic matter on the surface of marshes is excluded from the genesis of miasma. 'I think, then, there is ground for the following propositions. 1. The ground plays a considerable part in the development of malaria. 2. The ingestion of marshy water does not produce intermittent fever. 3. It would perhaps be easier to discover the frebrigenous germs at the surface of newly bared land than in the atmosphere of marshes.'

OBSTETRICS.

NUX VOMICA IN THE VOMITING OF PREGNANCY.

Dr. L. S. Blackwell, of Bound Brook, New Jersey, writes (Philadelphia Reporter, Nov. 8):—'Without claiming any originality in the use of this drug, the following case assuredly confirms the value which has been attached to it, and demands recognition in the consideration and treatment of inordinate gastric irritation from pregnancy.

'I was called, in her fifth pregnancy, to visit Mrs. S——, a lady of decidedly nervous temperament, who had, for a number of years, been a victim to severe and obstinate paroxysms of neuralgia of the head, neck, and shoulder.

'The distressing nausea and vomiting had been decidedly prominent in previous pregnancies, and her physicians, with their varying prescriptions, had failed to mitigate the symptoms in the slightest degree.

'With the expectation that my remedies would share the fate of those of my *confrères*, I commenced the treatment by the administration of the following combination, recommended highly by Professor White of Buffalo—

℞ Cerii oxalatis,
Bismuthi subcarbonatis,
Pepsinæ . . . aa ℥j. M.

'Divide into twelve powders; one three times a day.

'This failed to afford any amelioration. Oxalate of cerium alone was tried, and with a similar result. With a faint hope, I then directed two drops of tincture of nux vomica to be given every two hours.

'This produced a decided impression upon the symptoms, and afforded infinite relief to the patient, without the development of cramps, which have been attributed by Eobach to the use of this drug.'

SCIATICA FOLLOWING THE CONTINUED USE OF A SEWING-MACHINE.

Dr. Seeligmüller relates the case of a woman, aged 50, who, after having worked with a sewing-machine for four years, had tearing pains in the leg with which she worked, extending from the ankle to the tuber ischii. The pain was not felt when she rested, but was brought on by walking or standing. The patient had also a sensation of cold and formication in the affected foot. Continued labour with the sewing-machine produced, besides the pain, loss of muscular power in the legs, wasting of the muscular substance, and a state of great general weakness. As a prophylactic measure, she was ordered to take longer intervals of rest between the periods of work.—*British Medical Journal.*

TREATMENT OF RODENT ULCERS.

Dr. E. D. Mapother *(Medical Press and Circular)*, says: I have lately treated an ulcer involving the greater part of the left half of the face, and the case seems to me worthy of record. The patient was a healthy married lady, aged thirty-eight. Eight years previously the ulcer had formed, and never had completely healed, although its size had, on three occasions, lessened considerably. The surface was shining and level, without any defined granulations. The edge was somewhat irregular. It was painless except when dressings were being removed. There was no glandular enlargement, nor the least interference with health. The surface was dressed with a mixture of citrine ointment, and one-eighth part carbolic acid, poulticing with bread and water being substituted when the surface became tender. Donovan's solution was ordered in thirty-

drop doses thrice daily. Under this treatment the ulcer healed in about five weeks, leaving a scar a little darker in tint than the skin and with an edge slightly puckered, somewhat in the manner of keloid. It has now remained in the same state for three months.

'I have since treated a lady in the suburbs for an ulcer near the outer canthus, which presents more of the characters of Jacob's ulcer. It was about as large as a sixpence, covered with a brown fetid scab, and had existed for over ten years, beginning when the patient was fifty-five. This patient was a sufferer from gout, and from its frequent concomitant, eczema of the legs. Having poulticed off the scab, I used the same ointment, and medicine as in the former case with success, so far as I can judge, for it is possible the ulcer may re-open. Ever since Jacob described rodent ulcers, in 1823, excision has been regarded as the sole remedial step, but in some cases it is not available. For instance, the ulcer was too large in the first case detailed, and in the second the patient refused to submit to operation, as she had done six years ago when the suggestion was made by a most eminent consulting surgeon.

'The same local application and alterative have cured a case of sycosis menti which was lately under my observation. The disease was not parasitic, but most obstinate and extensive. Before I tried citrine ointment, and carbolic acid, with Donovan's solution internally, I had used lotions of chloride of mercury, cyanide of potassium, and several other applications, without any benefit.

ACTION OF THE CINCHONA ALKALOIDS ON BACTERIA.

Dr. E. Buchanan Baxter (The Practitioner, November, 1873,) arrives at the following conclusions as the results of a large number of experiments upon the influence of the four chief alkaloids of cinchona bark over bacteroid organisms:

1. Quinia is doubtless excelled by other antiseptics, but there is no substance equal to it in antiseptic power which can be introduced into the blood in the same proportions without risk of fatal effects, if we except the other cinchona alkaloids, and the sulphate of bebeeria.

2. Quinia in such fractional doses as are capable of being introduced into the circulation exerts an inhibitory, not a toxic, action upon microzymes. It may check septic changes, it cannot destroy the organisms to which such changes are due.

3. The four cinchona alkaloids are very nearly equal in antiseptic power. Arranged in the strict order of their efficacy, they stand thus:—quinia=quinidine; next comes cinchonidine; last though at no great distance, cinchonia. This order corresponds to that in which they have been arranged with reference to their antiperiodic power.

4. Among reputed antiperiodics, the sulphate of bebeeria seems to equal quinia in antiseptic power.

5. Among reputed antiseptics, sodic sulpho-carbolate and strychnia have a decided value, though they stand some way below quinia; sodic sulphate has a feeble though decided antiseptic value; sodic hypo-sulphate, little or none; berberin and æsculin are hardly, if at all, antiseptic; potassic picrate is almost equal to quinia, but it is doubtful whether it can be given in sufficient doses without danger of life.

Active measures have been taken in Montreal to prevent the further spread of the small-pox. Compulsory vaccination by the public vaccinators is the order of the day.

MEDICAL NEWS.

The Philadelphia Medical Times of Nov. 8th refers to two additional suppressed deaths from chloroform, occurring in the practice of a surgeon in that city.

Dr Clifton E. Wing, recently one of the house officers of the City hospital, has been appointed house physician to the Women's Hospital, New York.

It is proposed in Italy to erect a monument to Eustachius. Few anatomists have had their trumpet so much blown.—[Boston Medical and Surgical Journal.

A petrified child has been exhumed at Cheyenne, Wyoming Territory, according to a writer in the Cincinnati Lancet and Observer. It had been dead for two years, and is described as absolutely perfect and statue like.

The daily registers of the Morgue, in which the 'sensational' information obtained about the bodies exposed there, is carefully written, are being collected and bound in volumes, and they will be placed for the benefit of the lovers of tragedy in in the National Library. This new apocrypha of modern life will, no doubt, find many readers, some with the objects of literary craft, and some from more serious and philosophic motives.

EARLY CLINICS.—That bedside teaching was pursued eighteen centuries ago, although in no very pleasant way for patients, appears from the following lines translated from Martial:

> "I'm out of sorts, but Symmachus is here,
> His hundred pupils following in the rear;
> Ali feel my pulse with hands as cold as snow,
> I had no fever then—I have it now."

—[Mapother's Address, Med. Press and Circular.

The Lancet quotes the following from a French authority as a mode of ascertaining the age and consequent freshness of an egg: Dissolve one hundred and twenty grammes of common salt in a litre of water. If the egg is one day old, it will sink to the botton; if it was laid the day before, it will not reach the bottom; if three days old, it floats; and if more than five, it comes to the surface, and the shell projects more and more according to staleness.

The magistrates have thought it right to commit for trial for manslaughter Surgeon-Major Macleod, who administered excessive doses of morphia to his wife, with the intention, as stated by himself, of procuring her a night's rest. Bail was accepted in the case. According to the papers, a larger quantity was given than was at first stated. The one grain not producing sleep, it is now stated that double that dose was given and repeated, and naturally it was fatal.—Dublin Medical Press and Circular.

Professor Brunetti has recently invented some new apparatus for the cremation of the dead, after having convinced himself by five experiments on human subjects under the most varied circumstances (divers combustibles, gas retorts, closed vessels, open air), that the 'incineration of the corpse and the complete calcination of the bones by fire is imposaible under the usual condition.' We have before us an illustrated pamphlet in which is shown the new variety of reverberating furnace, by which he is enabled at an expenditure of a hundred weight of fuel, to obtain complete cremation in two hours. In the last experiment the corpse was that of a man, aged fifty; it weighed 102 pounds, the weight of the resulting ashes was two poumds and three quarters.

Colonel M'Neil has, we hear, had to leave the coast of Madeira. His wound will permanently disable the wrist. Both arteries were cut, and a large part of the tendons on the front of the arm were torn away. The Simoom Hospital Ship, anchored a mile off the coast, receives sick officers, and we hear good accounts of the whole medical department. Very serious dissatisfaction has been caused throughout the medical department by the nomination of a purely sinecure military commandant to the Victor Emmanuel Hospital Ship. Such appointments have been absolutely condemned and abolished in naval hospitals. They are entirely useless, and are regarded as costly and mischievous jobs. The present appointment is due to the Horse Guards.

EASTERN PRODIGALITY.

When a vestry official, as well known to dairymen as their own parish pump, walks into a milk-shop and asks for a pennyworth of milk, it is not at all surprising that Simpson should be kept judiciously out of the way. Some east-end dairymen seem to have been, however, cuttingly satirical in their mode of dealing with the sapient local authority; instead of adding water, they added cream. Out of six samples taken for analysis, five were reported to the Limehouse Board of Works as containing an excess of cream; one only contenting itself with being pure. This was protesting too much. Such prodigality must lower his pride of office by sending a ragged boy, carrying a tea-cup, as deputy. It must be feared that his cup will not be as richly filled as the inspector's official bottle.—*London Medical Record.*

POWDERED COAL-TAR FOR WOUNDS.

M. Magnis-Lahens, of Toulouse adds charcoal to the coal-tar (33 per cent. of the latter), and thus obtains a light and porous powder, which does not irritate wounds, and which is easily washed off with cold water. This combination is a very useful mixture of two antiseptic substances. The charcoal absorbs the gases formed by fermentation, coagulates the albumen, and prevents its decomposition; thus effectually assisting the carbolic acid contained in the coal-tar. Some wounds do not bear powdered applications; for these, 100 parts of the powdered coal-tar should be allowed to macerate for some hours with 400 parts of spirit, and filtered. The spirit should only be of 18° Cartier, as a stronger would dissolve the resins. As coal-tar principally acts through the carbolic acid it contains, the above-mentioned maceration may be replaced by the following solution: crystallised carbolic acid, 1 part; spirit (at 18° Cartier), 99 parts. This solution is cheap and very effectual.

Dr. Carpenter has delivered two lectures for the Sunday Lecture Society, in St. George's Hall, on the Functions of the Brain. The first gave a rapid sketch of the successive additions made to our knowledge of nervous physiology, from Sir Charles Bell's discovery of the distinction between the sensory and the motor nerves, to Dr. Ferrier's indications of the localisation of function in the brain. Dr. Ferrier's experiments confirm the inference previously drawn by Dr. Carpenter, that the posterior lobes are the instruments of those higher operations resulting in ideas which do not prompt to motion. Dr. Laycock's doctrine of the reflex action of the cerebrum is also confirmed by Dr. Ferrier's experiments. Dr. Carpenter is in doubt as to whether the centres of the movements of expression are also the organs of the ideas or emotions which call forth those movements, in spite of Dr. Ferrier's ingenious endeavour to deduce from the phenomena of aphasia an indication that such may be the case.

Small-pox is at present very prevalent in Spain. The epidemic is specially active in the province of Toledo, where it has already carried off a great number of victims.