by trephining it was found. In all these cases, however, there was the local injury as a guide in the operation, and it is only in the very rare instances, where there is no distinct spot injured, no scalp-wound or fracture, that much hesitation need be felt on this point. The course of the symptoms, the time at which they occur, and the precedence of rigors and other indications of suppuration, sufficiently distinguish between effusions of pus and those of blood or serum, and *à fortiori* do the symptoms differ widely from those of morbid growths. But if the surgeon will be seldom disappointed in his primary object—the discovery of matter—this series supplies a very intelligible reason why his ultimate end is so rarely attained in the preservation of the patient's life. That out of seven successive cases, six should present unmistakable evidence of pyæmia in other parts of the body, and of phlebitis in the bones and sinuses of the skull, can hardly be considered an accidental circumstance, and will, I fear, go far to show that Mr. Dumville's opinion, as to the relative frequency of limited and diffused suppuration, is not borne out by pathological investigation. I would willingly believe, however, that this may not be so in other parts of the country, where pyæmia, that bane of all operative surgery in our London hospitals, is less rife; and I would appeal to the experience of our country hospitals to correct, if possible, this conclusion.

But it may be said, were these eight cases properly selected for the operation? Were no limited abscesses found after death, in cases which had not been operated on, either above the dura mater, amongst the membranes of the brain, or even in the brain itself? To answer these questions, I refer again to our *post mortem* books; and here I find seventeen other cases, besides the seven which I have detailed above, in which a *post mortem* examination showed the precise condition of the parts.

II. Eight of these belong to our second class, in which matter* was found between the bone and dura mater after death, the skull not having been trephined.

CASE I. In one (vol. viii, p. 211), the injury was a scalp wound not exposing the bone. The bone was infiltrated with pus; besides the pus between the bone and dura mater, the tissue of that membrane was infiltrated with pus, and there was matter in still greater quantity in the arachnoid and subarachnoid spaces. The blood in the longitudinal sinus was also thought to contain pus. This was in all probability a case of pyæmia; but the other viscera were not examined.

CASES II and III. Two other cases followed scalp wounds, in which the bone had been exposed. In the first (vol. iv, p. 132), as the spine was fractured, no question of operating could have occurred. The mischief in the head followed an attack of diffuse inflammation. There was pus, both in the circumscribed and diffused form, between the bone and dura mater, and there was suppuration also in the arachnoid cavity. The texture of the brain had a greenish hue in places. The other (vol. v, p. 193) was a case of pyæmia with secondary deposit in the lungs. There was extensive suppuration here between the bone and dura mater; and it was noticed that this suppuration was not in any way circumscribed, although a puffy tumour existed on the scalp. There was also effusion of fluid in the arachnoid and subarachnoid spaces, and abscesses (probably pyæmic) in the orbit.

CASE IV (vol. iv, p. 270). The notes of this case during life are wanting. There was, however, slight separation of one of the sutures with exposed bone. A small quantity of pus and lymph was found between the bone and dura mater, and this might probably have been evacuated by the trephine; but a large quantity of pus existed also in the arachnoid cavity; and there were secondary deposits in the lungs.

CASE V (vol. vi, p. 158). This was a case of simple fracture, with wide separation of the fragments. To this separation it was probably owing, that though there was a very extensive effusion of lymph and pus between the bone and dura mater along the whole line of injury, there were no very distinct symptoms of pressure, the patient dying of diffuse inflammation. There was pus also in the arachnoid and subarachnoid spaces.

CASES VI and VII. These are cases of compound fracture; in the first case (vol. vi, p. 168), with laceration of the brain and hernia cerebri; and in the second (vol. xiv, p. 168), with loosening of a portion of bone which had been removed. In both cases, therefore, there was free exit for the matter. Both

presented matter in the arachnoid cavity, and the latter also in the subarachnoid space.

CASE VIII. Lastly (p. xii, 164), we have the same state of things in a fracture of the base of the skull; here there was pus between the bone and dura mater at the seat of fracture, and it extended also into the orbit, and into the tympanum on the affected side; there was also extensive effusion of lymph in the subarachnoid space, and pus in the sinuses. This latter feature renders it probable that pyæmia either existed or was impending.

These were all the cases in which pus existed above the dura mater; in none of them was the suppuration limited to a circumscribed abscess below the bone corresponding to a separation of the pericranium from its external surface, as described by Pott; nay, further, in the only two cases in which anything resembling this "puffy tumour" was seen, although suppuration existed below the skull in both cases, it was not limited in either instance, and therefore would have disappointed the hopes of the surgeon in the second case, had he operated, as it did in the first.

III. Having discussed at such length the relations of suppuration above the dura mater, I do not think I need state equally minutely the appearances in the remaining nine cases, where the pus was situated below that membrane, amongst the membranes of the brain. Suffice it to say, that they tell just the same story. They occurred after the most varied injuries: viz., 1, scalp wound to the bone; 2, scalp wound with linear fracture; 3, 4, 5, fractured base of the skull; 6, compound fracture, with laceration of the brain and hernia cerebri; 7, 8, compound fracture with depression, for which the trephine was applied; and 9, a case in which the skull was trephined twelve months after the injury, for the relief of symptoms dependent on depression of the internal table. In none was the suppuration limited. Some were complicated with abscess of the brain; in some the suppuration was doubtless connected with pyæmia, but in a great number of these cases the head only was examined.

IV. Of the fourth class which I have mentioned, viz., that in which the matter was situated only in the cerebrum itself, no instance occurred except the case (Class I, Case III) in which it was unsuccessfully opened by the trephine.

I have thus endeavoured to give my reasons for believing that intracranial suppuration after injuries very rarely occurs in the limited form, and is, in a great number, if not the majority of cases, only one of the manifestations of pyæmia, accompanied or caused by phlebitis of the veins of the diploe. I have no desire, however, to impugn Mr. Dumville's conclusion, that the trephine ought to be used in such cases, wherever no special contraindication exists: only let us remember that the operation is recommended merely as a *pis aller*, seeing that the disease is, as far as we know, if left to itself necessarily fatal, and that in a few recorded instances the operation has afforded relief.

39, Curzon Street, Mayfair, October 1858.

REMARKS ON MYALGIA: WITH CASES.

By T. INMAN, M.D., Liverpool.

[Continued from page 408.]

THE subject of myalgia is at the same time so novel and so interesting, that scarcely any apology is needed for keeping it before the notice of the profession. I have already trespassed frequently on the space of this JOURNAL; but new phases are constantly occurring, giving one a greater idea of the extent and bearing of the subject.

Before recording some fresh cases illustrative of important points, let me recapitulate the chief phenomena of myalgic or muscular pains. They have their seat in the fleshy parts of muscles, in their tendinous prolongations, or in the fibrous aponeuroses. The continuous stretching of any white fibrous tissue, from whatever cause arising, will produce a similar pain. Fibrous tissue is more readily stretched in the weak than in the strong; and the process is attended with greater pain. The pain is described as hot and aching, and is commonly attended with cutaneous soreness, and tenderness on slight pressure. Whenever the pain is due to stretching, it is relieved, though not absolutely cured, by relaxation. The pain is independent entirely of the course of nerves, etc., and is not

* I have included cases in which yellow puriform lymph was found, even if it had not yet softened completely into pus. This would obviously have a tendency to make the discovery of limited deposits more probable.

materially influenced by those constitutional remedies which are useful in neuralgia. I have already recorded instances in which myalgia has been mistaken for hysteria, neuralgia, pleurisy, puerperal peritonitis, disease of the liver, kidney, bladder, or uterus; and scarcely a week passes without my being able to increase this list. The key to the investigations into these complaints is to consider that, as double work in a man of ordinary strength will produce myalgia, so ordinary work will produce a similar effect in those whose muscles are diminished in power to half their normal strength. The presence of muscular pain, therefore, involves either excess of work or want of power: where neither of these causes are in operation, others must be sought.

In giving the following histories, I shall occasionally adopt the conversational style, with a view to show how readily a diagnosis may be formed.

CASE I. General Myalgia. Mr. H., aged 44, a man of almost herculean proportions, consulted me for pains in the breast, side, back, etc., for "swimming in the head", and liver-disease. As he spoke, he passed his hand in succession over all the large muscles of the trunk, and remarked that the pains never lasted beyond ten minutes in any one place, and that sometimes they were attended with swelling, etc. After myself pointing to the various muscular insertions, etc., and ascertaining those to be the principal seats of pain, the following colloquy ensued:—"Of what business are you?" "In the beer trade." "What is the routine of your day's work?" "Going out for orders, collecting money, etc." "Then you've no hard bodily work?" "None whatever." As it was now clear that the pains were not caused by extra exertion, it was evident that there must be some cause for excessive debility. "Do you drink heavily?" "No; a few glasses of ale a day, and sometimes brandy and water, when the pain is very bad." "Is your appetite good?" "I'll eat as much as the doctors will let me; but they say I am not to eat much, for fear of apoplexy. I'm often giddy when I turn round or stoop; and sometimes I've fallen down. My eyes, too, are apt to get very bloodshot." "But you eat enough to live on comfortably?" "Yes." "Have you lost any blood by cupping, bleeding, or piles?" "No." "Are you much purged?" "Aye, that I am." "How much?" "Often six times before breakfast, and sometimes twenty times a day!" "What's all that for?" "Drs. So-and-so and So-and-so order me medicines for liver-disease, and to keep off apoplexy." "I suppose you feel very weak?" "Aye, that I do; I was so done up, I could scarcely get up your door-steps; sometimes I have fairly to crawl on all fours up stairs to bed!"

In this case the diagnosis was myalgic pains in the various muscles of the trunk, not arising from over exertion, but from deficient power to do his ordinary work. The debility was due to the purging; the swimming head and bloodshot eyes had a similar origin. The pain in the side had not an hepatic origin.

The indications of treatment were sufficiently plain; and steel, cod oil, generous diet, abstinence from aperients, and a daily rest, cured the man completely in ten days of all his symptoms.

CASE II. Mr. J., aged 60, who had all his life been an extraordinarily healthy and powerful man, began a short time ago to suffer from complete anorexia and occasional vomiting. He continued, however, to go down to business as usual. This continued for about six weeks; during which period he became extremely feeble. He now began to suffer from constipation, and allowed the bowels to remain unopened for three days. They were not relieved without great abdominal straining; and on the same day, he had an unusually protracted fit of vomiting. The day following, the pain in the abdomen was so severe, that he was under the impression that he was threatened with gout in the stomach. The vomiting continued; and the pain, at first diffused, became settled in two localities, and was so intense, as almost to make him faint when he sneezed or coughed. At this period, I was summoned to attend him. I found that there was exquisite pain and tenderness on pressure on each side of the pubis at the insertion of Poupart's ligament and the linea semilunaris. The pain shot down to the scrotum; and the testicles were forcibly drawn up during its continuance. There was no hernia, nor sign of organic disease. I explained to the patient the real nature of the pain, and its dependence on a strain upon the tendons greater than they were able to bear. I recommended the local use of a solution of atropia, and complete rest in the recumbent posture, with champagne to relieve the sickness. These means were successful; and in two days the patient

again contrived to get to business, though the soreness continued for a week. In this instance, the tenderness was confined to as small a spot as it is in pure inframammary pain.

CASE III. Mary C., aged 19, a slight made girl, of consumptive family, came into the Liverpool Northern Hospital, complaining of severe inframammary pain. On requesting her to place her finger on the part, she immediately indicated a spot apparently corresponding to the upper insertion of the right linea semilunaris. "But you have pain in other places besides that?" I inquired, passing my hand over the origins and insertions of the trapezius, pectoral, external oblique, and the extremities of the rectus abdominis. She had or had pain in every spot I touched. "Now, of what business are you?" "A milliner." "What are your hours?" "From nine in the morning to nine at night." "Do you work on Sunday?" "No!" "How are you on Monday?" "Always better?" "The pain goes when you lie down?" "Yes, always; but it comes on again whenever I turn round in bed." "You have not had the pain long?" "Two months." "But you've been a milliner for longer than that?" "Yes." "And your hours have been always the same?" "Yes." It was clear, therefore, that some cause for debility was to be sought. A few inquiries elicited that for the last three or four months she had been suffering excessively from leucorrhœa. The catamenial function was regular. Rest in bed, tonics, and astringent injections, set her up again in about three weeks.

A propos of this case, I cannot help adverting to a paper read by Dr. C. Coote, at the Harveian Society of London, and reported in the BRITISH MEDICAL JOURNAL, June 19th, 1858, in which an attempt is made to show that the pain in question is a pure neuralgia. It is in medical science a matter for regret that there should be so strong a tendency to put down a mysterious pain to some equally mysterious operations of the nervous system, and to pass by perfectly adequate explanations, because they are so simple. Look, for example, at the following explanations by Dr. Coote:—"True inframammary pain is a peripheral neuralgia, having its (probable) origin in malnutrition of the nerves of the part. This, again, results from disordered circulation, affecting the left inframammary region especially, by reason of its peculiar anatomical relations. The immediate cause of this vascular derangement consists in disordered innervation of the smaller arteries of the whole body, occasioning irregular spasms and dilatations of their walls—a condition which, while in the inframammary region it occasions neuralgia, in other parts gives rise to chills and flushes, to palpitation, to excessive or defective secretion, to congestions, hæmorrhages, and fluxes; while an analogous state of the motor nerves of the alimentary canal produces obstinate constipation." What a "darkening of counsel with words without knowledge" is here! How much more simple is it to say that the pain depends upon a prolonged strain upon the tendinous or fibrous portions of the abdominal parietes, which is greater in some parts than in others, according to the position commonly adopted by the patient; that it is relieved by every position which relaxes the strain, and *vice versa*; that it is attended with similar pains elsewhere; and further, that the constipation, flushes, cramps, palpitation, etc., which accompany inframammary pain, are nothing more than evidences of general debility affecting other organs of the body as well as the muscular system.

The main question between neuralgia and myalgia must ever be (until at least the new word becomes domesticated in medicine), Can stretching of the white fibrous tissue produce an amount of pain comparable to that of genuine neuralgia? In other words, Is it possible for severe suffering to have other than a purely nervous origin? Any one who wishes to answer this question for himself should straighten the lower extremities, and then attempt to touch the ground with the tips of the fingers; noting at the time the sensations in the popliteal region. If he wish to observe a similar pain in woman, let him note the intense agony complained of in the sacro-sciatic region during the time the head is passing through the pelvis during parturition. The following case will give another illustration of the same fact.

CASE IV. Mary J., aged 19, of consumptive parentage, came into the Liverpool Northern Hospital with all the symptoms of caries of the spine. The disease was in its early stage, however; and there was no gibbosity. There was no local pain, nor tenderness on pressure. As the case proceeded, the patient complained of gradually increasing pain, which was at last sufficiently severe to prevent her sleeping without opiates. The part affected was now gibbous, and the pain was entirely

referred to the spinous processes; and the suffering was due solely to the stretching of the interspinous and other ligaments. It was relieved by the local use of belladonna and opiates, but nothing removed it entirely. The patient is still under observation.

The pain from varicose veins is equally due to the unusual stretching of their white fibrous tissue.

The following case shows another phase of myalgia of equal interest with the preceding.

CASE V. Jane C., aged 20, was admitted into the Northern Hospital with a painful tumour in the side. She was tall, slim, and delicate looking; and complained of pain referred to the right inframammary region. On making an examination of the abdomen, a swelling with a well defined margin was recognisable, extending from the ribs to the crest of the ilium on the right side; but it was clear that this was due entirely to a permanently cramped condition of the external oblique. She had pain at the insertions and origins of all the abdominal and thoracic muscles, and in the gluteal region also. A few questions elicited that she was the servant of a washerwoman, and that she was occupied at least six hours daily in working the "dolly"; that she had been able to do her business very well until a short time back, when she had been pulled down by leucorrhœa, menorrhagia, loss of appetite, and indigestion. Tonics, rest, and anodyne frictions were prescribed; and the woman discharged herself as cured in ten days. Two years afterwards, she came in once again under the same circumstances; and was again discharged cured.

Notwithstanding the foregoing explanation of this class of pains, there is still a strong disposition on the part of practitioners to regard them as hysterical, and to associate them in some manner or other with the uterus, or the excitable disposition so constantly attributed to females. It is advisable, therefore, to show that they are by no means confined to the gentler sex, and are to a great degree independent of the nerves.

CASE VI. Francisco B., aged 35, an Italian Swiss, was admitted into the Liverpool Northern Hospital with chronic dysentery. We ascertained that he had been in Australia at the Gold Diggings; that he had been taken with his present disease twelve months prior to his admission; and that he had never left his bed since. He was carried on board ship, and thence again to the Hospital. On admission, he was excessively emaciated and weak. At the end of six weeks, he began to recover; and in about a month more the dysentery was quite cured, and he was able to sit up in bed. Up to this time, he did not complain of pain; but as soon as he was sufficiently well to dress himself, he complained of severe suffering referred to the abdominal walls, accompanied by tenderness on pressure. This continued for many hours every day, and always drove him to bed. Nevertheless, he gained flesh and strength daily. Anodyne frictions relieved him to a small extent; but some weeks elapsed ere he was able to sit up and walk about all day without pain. There could be no pretence here that the pain was neuralgic or hysterical; it was clearly due to the unusual strain thrown upon muscles that had long been all but inert; and it did not differ in the smallest degree from that so common amongst women.

CASE VII. At the same time another patient in the same ward complained of abdominal pain, which he referred chiefly to the hypochondriac regions and the epigastrium. In describing it, the man placed both hands on the spot corresponding to the inframammary region in the female. The case had been one of simple fever, of course implying great debility; and the man got up too soon, and remained up too long. He was instructed accordingly, and soon ceased to complain. Two days before he left, however, he stated that the suffering exceeded anything he had previously had. But the nurse of the ward, who is now very familiar with the nature of these pains, at once explained this, by saying, that he had been out of doors, and that he told them he had been having a "hard run"!

The next is, if possible, a more instructive case; inasmuch as it shows how very trifling an amount of exertion is enough to produce these pains in weakly subjects.

CASE VIII. James C., aged 64, was admitted into the Hospital for simple rheumatism, under the care of my colleague. The rheumatic pains speedily gave way, but he remained in the house to regain his strength. In the absence of my colleague, he came under my notice. When I saw him at first, he was in bed, had an unhealthy aspect, and total anorexia. I could detect no organic disease. By and by, he began to sit up, and to complain of constant abdominal pain, referring it chiefly to the hypochondriac region. He never had the pain when lying

down; it was, however, severe if he tried to turn round in bed. It was clearly myalgic, and was treated accordingly; nothing, however, did him any good until under the influence of steel and cod oil, the appetite improved, and his natural strength augmented.

I find that these pains are extremely frequent in consumptive cases, and in those who, though not actually phthisical at the time, have inherited a consumptive diathesis. In them the right shoulder is the most common seat of pain; the suffering being sometimes referred to the insertion of the trapezius muscle, and sometimes to the origin of the pectoral, according to the uses to which the arm has been put.

It is a very common thing to find young and delicate mothers, who have much to do in carrying their infants, suffering from this affection—especially while they are suckling; for at that period they are doing a more than common amount of work, and experiencing a steady reduction of power to do it. I have had many instances of this under my notice lately, of which the following is a good example.

CASE IX. Mrs. T., aged 33, of delicate complexion, but of healthy family, mother of five children in eight years, had been confined about two months, when she began to suffer severely from pain under the right clavicle and in the right groin. As her appearance was eminently calculated to give rise to a suspicion of phthisis, the former was considered as an indication of that complaint, while the latter was attributed to inflammation of the ovary. On examining her, I could not detect any physical signs of disease of the lungs; but her appearance, and the description she gave of herself, indicated an extreme amount of debility. She had even found that one month's nursing, during which she had been for the most part on the sofa, was too much for her; and after this, when she had begun to fulfil her ordinary household duties, she had found herself quite "done up." As she could afford little assistance, she had the care of the baby almost exclusively, and nursed it upon her right arm. The pain was not severe in the morning generally—the parts were only sore; but towards evening she was unable to continue her nursing without great suffering. The pain in the groin was always worst at night, and was reproduced by turning in bed and lying with the body quite horizontal. Sometimes she had a "lump" in the abdominal walls. In this case the diagnosis was very easy; it was clear that the pectorals, deltoid, and trapezius were overworked in nursing the baby; that the external oblique and other muscles of the right side of the abdomen were equally tasked, the effect of the fatigue being chiefly felt by Poupart's ligament. The plan of treatment was equally clear; less nursing, full diet, tonic medicine, and a greater amount of rest.

I have, in previous communications, adverted to the fact that it is not common to find that both insertions of a muscle suffer equally. That it is really so, farther experience proves, though it affords no adequate explanation of the reason why. Thus, from excessive cough, one patient refers the pain to the origin, another to the insertion of the pectoralis major and minor; one sempstress refers all her pain to the occipital, another to the spinal, another to the scapulo-clavicular attachment of the trapezius. One refers her pain to the inframammary, another to the inguinal, and another to the semilunar attachment of the external oblique. One refers her suffering chiefly, if not entirely, to the pubic, and another to the epigastric attachment of the rectus; while others refer their complaints equally to all these spots simultaneously or in succession. Another curious fact, of which I have more recently convinced myself, is, that the myalgic pain produced by prolonged stretching of muscular or tendinous fibres will occasionally pass away without there being the smallest relaxation of the tension. We are not in a position to explain this, nor can we expect to do so until we have some satisfactory information upon what muscular "stiffness" and soreness depends. Experience tells us that a horse will often be lame and halting until he "warms to his work," and that many a pedestrian, who is sore and stiff at starting, becomes comfortable at the end of his first hour. Reason, therefore, would suggest that a good deal of the suffering arising from prolonged stretching might arise from deficiency of circulation in the part—a conclusion strengthened by the facts that stretching a part must diminish the calibre of all its longitudinal tubes—and that warmth will relieve myalgia quite as effectually as exercise. But until we have more definite grounds to go upon, it will be judicious to avoid theoretical explanation, and I therefore content myself with giving the foregoing for as much as they are worth.