

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

29. *Dislocations of the Ankle below the Astragalus.*—Dr. PAUL BROCA has contributed a memoir on this subject to the third volume of the *Mémoires de la Société de Chirurgie de Paris*. He enters at great length into the history of what he terms *subastragalian* dislocations. The displacements of bone which occur in the tarsal region are so numerous and varied, that M. Broca thinks it necessary to establish subdivisions and a methodical nomenclature. He divides them into three classes; but before proceeding to describe them, he gives an anatomical view of the relations of the astragalus to other bones.

The astragalus may be described as the key of the ingenious mechanism of the ankle; it is the bone which receives directly the weight of the body and transmits it to the other bones of the tarsus. Notwithstanding its small size, it articulates with four different bones, and its numerous articular surfaces take part in all the movements of this complicated region. Three superposed articulations are grasped, as it were, around the astragalus; the first is the tibio-tarsal, which is almost the exclusive seat of flexion and extension; the second is the *subastragalian*, under which term the author comprises, not only the two astragalo-calcanean junctions, but also the astragalo-scapoid connection. In the movements of this triple articulation, the astragalus, fixed to the bones of the leg, remains immovable, and the rest of the tarsus moves below it, so as to carry the point of the foot inwards or outwards, which constitutes adduction and abduction. The third articulation is the medio-tarsal. The astragalus and the calcaneum, constituting a solid mass, furnish a double articular surface on which the anterior range of the tarsus rests. The movements of flexion and extension are here very obscure, those of adduction and abduction hardly exist; but this articulation is the principal seat of those movements of torsion, which elevate one of the edges of the foot by depressing the other. The three articulations of the ankle may be moved together or singly; and they may therefore be dislocated separately or all at once.

M. Broca divides the dislocations into four groups: 1. The *tibio-tarsal* luxations, of which he does not here treat; 2. The *subastragalian luxations*, in which the astragalus preserves its relations with the bones of the leg, while the rest of the foot is carried in a variable direction; 3. The *medio-tarsal luxations*, in which the posterior range of the tarsus preserves its relation with the leg, while the anterior range is displaced altogether or in part; 4. *The luxations of the astragalus properly so called*, in which this bone, by a complex movement and as a result of extreme violence, is expelled from the cavity which it occupies without the other bones of the foot losing their mutual relations. This classification, says the author, is not an imaginary one, but is founded on real distinctions. The memoir is divided into two parts, one of which treats of *subastragalian*, and the other of *medio-tarsal luxations*.

The luxation of the os calcis has very rarely been observed; and, even after examining the recorded cases, M. Broca is induced to doubt the reality of this accident. Of the existence of dislocations below the astragalus there can be no doubt: and the case of Mr. Carmichael is related, in which it is shown that that distinguished surgeon, meeting with an accident on horseback, dislocated the os calcis backwards, the astragalus retaining its position. This kind of dislocation is distinguished from the luxation of the foot backwards, first, by the presence, on the dorsum of the foot and in front of the bones of the leg, of a rounded projection formed by the head of the astragalus; and secondly, by the absence of the tumour which is formed by the pulley of the astragalus behind the bones of the leg, when the whole of the foot is displaced. The lateral luxations of the *subastragalian* articulations are less rare than the luxation backwards; and the author has collected nineteen cases of this displacement. The signs of the luxation outwards are the following: the foot is in general carried in an abduction more or less considerable, or it may even take an entirely trans-

verse direction; the external edge of the foot is almost always elevated, and the internal edge rests on the ground. When there is a wound, it is situated on the inner edge of the foot, below or in front of the internal malleolus, and allows the head of the astragalus to project; the tendon of the tibialis posterior is pushed backwards or torn; the posterior tibial artery is distended or torn. The following are the signs of the luxation inwards: the foot is carried in the direction of adduction, its internal edge is more elevated than in the normal condition, which produces, to a certain extent, the form of talipes varus. When there is a wound, it is situated on the outer side of the foot, below or in front of the external malleolus. The tendons of the extensor communis are pushed back over the inner side of the head of the astragalus, which rests in general upon the dorsal surface of the cuboido-scaphoid articulation. The two most essential signs of these luxations are derived from the position of the astragalus in relation to the malleoli, and from the state of the movements of the foot. Whenever the head of the astragalus has preserved its normal relations to the bones of the leg, which fact may be always easily ascertained, the existence of a subastragalian dislocation is certain. The integrity of the tibio-tarsal articulation gives an important functional sign; for the movements of extension and flexion of the ankle, which are abolished in the tibio-tarsal luxations, and in the total luxations of the astragalus, are preserved in the subastragalian luxations.

The indications of treatment must be deduced from the foregoing considerations. When there is no wound, the reduction must be attempted as soon as possible. The extending forces must be applied at once to the dorsum of the foot and the projection of the heel, and must be exerted in a direction parallel to the axis of the leg. Counter-extension is to be made upon the leg, which ought to be flexed upon the thigh, in order to relax the gastrocæmii muscles. If manual force should fail, recourse must be had to pulleys. But it may happen that the reduction is impossible; and in such cases some authors have advised the use of incisions to relieve obstacles; but M. Broca thinks that such treatment is inadvisable. When there is a wound the case is more serious, and some surgeons have recommended amputation; but this can only be adopted in rare cases. The reduction of the luxation must be attempted, but it unfortunately fails more frequently than in luxations uncomplicated with a wound. The division of the soft parts, or the section of certain tendons may facilitate the replacement of the bones; but in spite of this, the luxation often remains irreducible, and it becomes necessary to extract the astragalus. The removal of this bone permits the straightening of the foot; and of eight patients who have undergone the operation, six have recovered. Removal of the astragalus is a less severe operation than amputation of the leg, and it presents the advantage of preserving the functions of the limb.

The latter part of M. Broca's memoir is devoted to the consideration of the *medio-tarsal* luxations, by which term are denoted the displacements which occur between the first and the second row of the tarsal bones; namely, in the articulation called Chopart's. The luxation will be *total* if the scaphoid and the cuboid bone are displaced simultaneously; and *partial* if one only of these bones be luxated. The conclusion at which the author arrives, is that nothing authorizes us to admit the reality of the total medio-tarsal luxation, and that the dislocations of the scaphoid bone which have been described by some surgeons, are really subastragalian luxations. M. Broca criticizes very ably the cases of astragalo-scaphoid luxations described by Boyer, Roux, Astley Cooper, and others, and considers that they are all incorrectly designated, and that by a more accurate diagnosis of these displacements remedial measures might be more successfully employed.—*Assoc. Med. Journ.* Dec. 23, 1853.

30. *Dislocation of the Astragalus.*—Mr. J. TUFNELL communicated to the Surgical Society of Ireland (Dec. 17, 1853) the following case of this serious accident:—

James O'Brien, æt. 19, a mason's labourer, residing in Power's Court, a thin, active man, was admitted into Martin Ward of the City of Dublin Hospital, at eleven A. M. on the 24th of August last, having a short time previously de-

scended from a scaffold in the neighbourhood of Stephen's Green. The account which he gave of the accident was this: He said that, finding the platform on which he was standing beginning to yield, he sprang from it into the street with as much force as he was capable of using, intending thereby to jump clear of the timber and brickwork, which he thought would fall upon and crush him. He reached the ground in an upright position, alighting upon a broken brick, which turned with him as his left foot came upon it, and he fell upon his side in excruciating agony. When brought to the hospital, he presented the appearance of a man who had received a severe shock. He was ashy pale, trembling, and cold, feeling sick, and making an occasional effort to vomit.

On examining into the nature of the accident (which, being in the hospital at the time, I did at the moment of his arrival), I found the left foot dislocated inwards from the tibia and fibula, with the astragalus thrown outwards, as represented in the cast upon the table.¹ The particular condition of the parts was the following: Looking at the limb as it rested on the mattress, the calf of the leg lying upon the bed, it presented somewhat the appearance of an aggravated case of talipes varus. The sole of the foot looked obliquely inwards, a deep angular hollow existing in the situation of the inner malleolus, with an acutely prominent projection, all but perforating the integument, and white and glistening from extreme tension, presenting at the outer ankle, caused by the malleolar extremity of the fibula, which was all but thrust through the skin. Two inches anterior to this point, lying upon the outer border of the tarsus, external to the last of the tendons of the extensor communis digitorum muscle, was a hard projecting mass of irregularly ovoid form, immediately beneath the skin, formed by the articulating surface of the luxated astragalus.

The foot itself, from the instep to the toes, bore a natural appearance, as did also the sole when viewed from below. The space beneath the internal malleolus, posterior to the scaphoid bone, which should, in the normal state, be occupied by the neck of the astragalus, presented a raised puffy swelling from effused blood. The internal malleolus was sunk deeply, occupying the position of the body of the astragalus, whilst the external malleolus projected directly outwards. The tibia and fibula were uninjured, there being no fracture of either of these bones.

Reduction was attempted (as soon as time had elapsed for taking a cast, or in about an hour from admission into hospital) and effected in the following manner: The patient was laid upon his back, the pelvis fixed, the thigh bent upon the pelvis, and fixed also, the leg bent upon the thigh, and extension made by assistants from a double clove hitch fastened round the foot, whilst direct pressure was put upon the displaced astragalus with the right hand, the foot itself, at the same time, being rotated outwards with the left. In this way reduction was effected, the bones slipping back into position within a minute, and all deformity disappearing at once.

The leg was placed upon a McIntyre's splint, and cold, by the water hattery, applied. He was ordered also the following pill to be taken regularly every fourth hour: R. Calomel gr. ii; Pulv. Jacobi ver. gr. i; Pulv. aloes gr. ij; Pulv. opii gr. ½. Ft. pil.

A combination long employed by Dr. Peile in cases of laceration to tendinous structures, and where tetanic affections might be deemed as likely to ensue.

The succeeding day there was effusion into the joint, producing an increase of girth of about one inch. The patient complained, however, of no pain, and said that he felt quite well again. The water dressing was continued until the 30th, when effusion having almost altogether subsided, it was discontinued, and a starch bandage applied. On the 30th of September he was discharged from hospital with the perfect use of his foot, and returned to his daily labour again.

The points for consideration in this case are: 1. What was the exact nature of the injury in its anatomical relations? 2. By what agencies was this dis-

¹ A copy of this cast has been presented to the Museum of the Royal College of Surgeons.

location produced? 3. Had I failed to reduce it, and restore the astragalus to its normal position, what steps would have been the best to pursue?

Firstly, then, as to the particular form of this dislocation. The astragalus had altogether lost its position between the tibia and os calcis, with the exception of the extremity of the head, which, lying on the edges of the scaphoid cavity, appeared to rest with its neck across the os calcis at the calcaneo cuboid articulation. The bone was displaced directly outwards, its attachment to the calcaneum having been ruptured, that portion on its under surface which naturally rested on the os calcis, being placed over the articulation of the calcis with the cuboid bone. The internal malleolus rested in a hollow, sunk down upon the os calcis, occupying the position normally held by the astragalus, whilst the external malleolus was raised up, and kept prominently outwards by the body of this bone wedged beneath it. The external lateral ligament, though tensely stretched, did not appear to have had either of its fasciculi ruptured.

Such being the nature of the accident, the second point for consideration is the immediate cause, or rather manner of its occurrence. This I would suppose to have been the following, viz: That the man, finding the scaffold was giving way, and making a violent effort to jump clear of it, consequently, not only came to the ground (a height of about twenty feet) with his full weight, but superadded to it, with the force of the impetus of the spring—a combined power of no ordinary magnitude. Alighting, then, on a revolving body, such as a rolling brick, fracturing of the limb was prevented by the force acting at an angle, the foot turning inwards at the instant of downward progress being arrested, whilst the *vis a tergo* of the weight of the body still continuing to act, the internal malleolus came to bear like a lever upon the side of the astragalus, pushed upon it laterally, and displaced it off the os calcis, throwing it outwards upon the cuboid, and elevating the fibular malleolus in the manner shown by the cast.

Regarding, then, the foot in this position, my duty of course naturally was to restore it to its normal condition if possible, which in the present instance I was enabled to effect; but failing to do so, what steps is the surgeon to adopt for the permanent welfare of his patient in simple dislocation of the astragalus? This is the third and principal point for consideration.

In forty-six cases of this accident recorded by Mr. Turner, of Manchester, I find six only to have been completely reduced; and of these six, three were accompanied by fracture, one of the tibia alone, second of the tibia and fibula, and the third of the os calcis.

In two cases the bone was partially reduced; in ten, it was suffered to remain in its new situation; in six, it was partially excised; in eighteen, it was wholly excised; and, in four, the limb itself was removed by amputation. Of these forty-six cases, sixteen were simple dislocations, and thirty were complicated or compound. It is with the first only that we have now to deal.

Of these sixteen cases, then, three were reduced, the patients regaining useful feet. In eight instances the astragalus was left undisturbed in its new position. Five of these cases did well, but the form of luxation in each was the same, namely, that directly backwards, “the astragalus, resting in the interval between the posterior part of the tibia and the tendo-Achillis, a spot sufficiently spacious to give occupancy to the dislocated bone without much removal of the tendon of the heel, and without direct pressure on the integuments of this region.” In the other three cases, where the bone was suffered to remain, and where the direction of the dislocated bone was either forwards, forwards and outwards, or forwards and inwards, there was a far different result. In the first, there was a permanent deformity; in the second, ankylosis of the joint; and, in the third, permanent deformity and lameness.

In the single case of partial excision, there was a useful foot; and in the two cases of complete excision, there was the same result. The remaining two cases were submitted to amputation. We have left, then, for consideration, out of these sixteen cases of simple dislocation (after deducting the three reduced and the five luxated backwards as not appertaining to the form of dislocation now before us), eight cases from which to draw our conclusions as to the mode

of treatment to be adopted, namely, whether to leave the astragalus in its new situation, or to excise it partially or *in toto*.

Five cases are to be included under the first head, because the two which became subjects for amputation were cases of this kind, where reduction had been attempted and failed, and where the bone had been left to nature. Now, of these five, we find ankylosis of the joint in one, permanent deformity and lameness in two, and loss of limb in the remainder. This does not argue favourably for allowing the bone to remain. Then as to excision partially or altogether: We have three cases, *one partial*, performed at the time of the accident, and *two complete*, the bone being removed on the thirty-third day in one instance, at the end of ten weeks in the other, sloughing having taken place in each. These three cases recovered with useful feet, still, in the two latter, not until the luxated bones had been removed. From the results of these cases, then, it would appear that in simple luxation of the astragalus forwards, forwards and inwards, or forwards and outwards; and, in fact, in all situations, excepting that directly backwards, if the surgeon should be foiled in reduction, he should at once remove the bone; and I would go even further, in the instance of a labouring man, and say, remove the foot by Syme's operation, leaving him Nature's pad, the integument of the heel to stump upon—a far more serviceable termination to his leg than an ankylosed and weighty foot. This I have no hesitation whatever in recommending. I am an advocate for conservative surgery, so far as the objects to be derived from it are *real gains and undoubted* advantages to the individual, such, for instance, as from excision of the elbow-joint, or partial amputation of the hand, whereby a member, though maimed, still is left more efficient than any that art and ingenuity could supply. This is right, this is what we should use our every effort to secure. But I say conservative surgery may be overdone, as I feel convinced it often is in the case here before us. I am speaking now from the experience of three cases that have come under my own observation, in each of which the bone was removed at different periods after the receipt of the injury, and in each of which the individual gained what would, I am convinced, be reported as a *useful foot*. This is the point to come to. The question for consideration is the power of progression that remains, the capability of taking exercise, and that exercise which a labouring man must do to enable him to earn his bread. These three cases would, I have no doubt, have been entered in a statistical report as recoveries with *useful feet*, but in neither of these three cases can the individual earn his bread.

One of these was a patient of my own, from whom I removed the astragalus (or rather, I should say, the greater portion of it, for it was fractured obliquely across, as is so frequently the case) in 1850. He writes to me now (in 1853) in answer to my question as to how he is going on, to say: "I can bear considerable pressure on my foot, and it seems to increase in strength, but I could, I think, get on better if I had a boot that would support me from the knee. I cannot yet do any work." This man tells the truth, and explains the matter in a word. *He has a foot that he can use, but he has not a useful foot*. He has a foot that for a clerk in an office, a solicitor, a commissioner, a man of private fortune, &c. &c., would do well enough, and I have no doubt he regarded by each as a very satisfactory cure, but he has not the foot for hard work. Could he have had this? I believe he could. Had I, in 1850, dissected out his entire foot, nipped off the malleoli, and brought up the pad of heel from below, instead of taking out the dislocated astragalus alone, he would not now, in 1853, be suggesting and of course wishing for a support from the knee. This question of conservative surgery, too, is to be looked at in another light, viz: its power of diminishing the risk of loss of life. This is, certainly, the all to be regarded point—to it every man must bow, but that argument is not in its favour here. Who that has had experience of the two cases under consideration, namely, the after treatment of a case of open ankle-joint from which the astragalus has either been removed by excision or left to come away, and of Syme's operation performed for accident on healthy structure, will make a comparison as to the risk to life between the two. Look at the inflammation, suppuration, sloughing, abscesses, and perhaps diffuse inflammation; the water-dressing, poultices,

incisions, splints, and swinging-cradles, with three months or more in bed; the opiates, tonics, bark and acid, wine and porter, and change of air, connected with the one, and the two sutures, strap of plaster, light dressing, and slight confinement required for the other. Some will say their experience of the latter does not lead them to regard it with such favour, that cases have occurred which induce them to modify the opinion they once formed. But, recollect, those amputations of the foot were not for *accident*, they were operations for *disease*. This is a different case altogether. Here there are infiltrated tissues, sinuses, ulcerated cartilages, perhaps unhealthy bone, a state of things far different from that of a clean cut through healthy parts; a state of things produced in, if not originated by, a strumous constitution, and which must be taken into account as influencing the one, and having no connection whatever with the other. This leads me to speak as strongly as I do, and I feel convinced that if removal of the foot by Syme's operation be adopted in our hospitals (upon the class of persons who become the subjects of this accident in cases of irreducible dislocation of the astragalus, either simple or compound, excepting always luxation directly backwards), a far better set of extremities in the aggregate will be given to the sufferers than they now have, and that they will, in very many instances, be enabled to labour in ways that they cannot do now.

There is, however, one modification that I would make, and that is, namely, in commencing the operation, I would do so in the form most suited in each particular instance for the *mere removal* of the bone; so that if, on dividing the integuments directly over it, I found the astragalus so far detached that I could free it, and bring it *easily* away, and close the joint, I would do so, giving the man the chance; but if I found it firmly attached, both by its connecting ligaments and surrounding textures, having, as it were, to be dug out of the joint, I would then proceed at once to disarticulate the foot.—*Dublin Medical Press*, Dec. 28, 1853.

31. *Scrofulous Caries of the Left Astragalus; Excision: Cure, with the Formation of a Fresh Joint.*—Mr. S. F. STATHAM communicated the following case to the Royal Medical and Chirurgical Society, Jan. 24, 1854:—

Henry C—, aged five, of strumous habit, and subject to weakness of the left ankle from birth, became affected at Christmas, 1851, with a swelling below and on the outer side of the left ankle, which was blistered. Since May he has been under hospital treatment; latterly, there have been formations of matter. The integument, after a few days' rest, appeared discoloured only over the situation of the astragalus, which bone could be readily reached by the probe. The patient being under the influence of chloroform, August 27, 1852, Mr. Statham, assisted by Messrs. Marshall and Clover, proceeded to remove the diseased bone. He made one incision, three inches long, parallel to the outer border of the extensor tendons of the toes, and then another to fall into the middle of this from the outer side of the foot. Having detected carious disease of the astragalus by the finger, he divided the neck of the bone with a saw, and readily removed it from the calcaneum. A proper splint was applied, and the case terminated favourably. The author concluded with some remarks upon the feasibility of the operation, which he believed had never been performed for a similar affection.

Mr. Solly said that the Society were much indebted to Mr. Statham for his very interesting case. From his (Mr. Solly's) experience, however, of similar cases which had come under his care in St. Thomas's Hospital, he did not think it necessary that the whole of the astragalus should have been removed. It appeared in Mr. Statham's case that the head of the astragalus was healthy, and that the disease did not necessarily involve the ankle-joint. He thought, therefore, it would have only been necessary to gouge out the diseased portion of the bone. He had adopted this mode of proceeding in a boy lately under his care in the hospital, with the best success. The boy's health, which had been much shattered previous to the operation, soon improved, and he got rapidly well. In this mode of proceeding, too, so large an incision was not

necessary, as in Mr. Statham's operation, by which several important tendons were probably divided.

Mr. Fergusson, whilst admitting that we were indebted to Mr. Statham for his case, could not agree with all that had been stated in the paper. He thought the case another step in advance to make surgery as perfect as it was in human power to do. This and similar cases drew attention to that style of conservative surgery by which the removal of a merely local disease left the affected member as nearly as possible complete. In Mr. Statham's case, considering all things, the foot, judging from the cast sent round, was wonderfully perfect. At the same time he had been astonished to hear that, if this operation had not been carried out, it was intended to have amputated below the knee. Such a proceeding, in his judgment, was not in accordance with the principles of conservative surgery, unless, indeed, there was more disease in this case than had been stated. It was of the greatest importance that views respecting conservative surgery should be placed before the profession; for no doubt very many cases of amputation had taken place, in which the simple removal of the diseased portion of bone would have been sufficient to have effected a cure. He agreed, as far as he understood, with the views which had been advanced by Mr. Solly, viz. to remove, in all practicable cases, the portion of diseased bone, instead of the entire bone itself. In Mr. Statham's case the whole of the astragalus was removed, and in this particular instance he (Mr. Fergusson) was not disposed to find fault with the proceeding, as the bone was so much diseased; but in many cases the entire bone had been taken away unnecessarily. The removal of a portion, or even the interior of a bone, so as to leave a mere shell, was a much better proceeding, and caused little deformity. He had a strong impression upon his mind, as the result of his experience, with respect to this partial removal of bones of the tarsus. He had rarely met with the os calcis so diseased as to require its entire removal.

Mr. Solly was sorry if he had not made himself sufficiently understood when he rose before, but Mr. Fergusson had fully supplied any emissions which he might have made. He (Mr. Solly) was desirous not to enlarge upon this subject, as his views on the matter were already in print, and could be referred to. In one instance he had operated on both feet, removing portions of the os calcis, astragalus, fibula, and tibia, and the patient got quite well.

Mr. Statham observed, that only the tendons of the peroneus tertius and flexor brevis of the fifth toe were divided, both of little importance. This case appeared to him similar to those of other joints in surgery, as the elbow, for instance, where, after an injury, two courses were open to the surgeon—either to excise the injured parts entirely, or to content one's self with extracting the separated fragments. The first plan gives a new joint in the course of some months; the last, a stiff one in the course of a year or more. Now this may be strictly applied to scrofulous caries, as with cancer, we may gouge, or cut out piece after piece, yet, unless a sufficient quantity be removed, such interruptions occur in the course of the after-treatment, as seriously to endanger the new joint. Without speaking of other parts, it is certainly inadvisable, when meddling with a scrofulous joint, and wishing to make a new one, that all the parts diseased should be removed. In connection with these remarks must be mentioned the very common practice of publishing the accounts of cases before the result is known. Nothing can be more uncertain than the after-occurrences to which the cases of gouging are liable, so long as any fistula remains behind. In the present case the cure was perfect, for he had happened to see the patient that day, the mother being recommended to produce the patient quarterly, that his health may be attended to.

Mr. Charles Hawkins believed that in cases of the kind detailed by Mr. Statham, the disease affected the body of the bone, and involved a great portion of it. He, therefore, thought we should be more conservative in our surgery, by removing the whole of the bone, for we never could be satisfied if all of the diseased portion were removed by gouging, which operation we might have to resort to again and again. He mentioned a case in which, after gouging, a fistula opening into the joint was left, making the limb useless. He objected

to half operations, which left sufficient disease to do mischief, and, therefore, could not be called "conservative surgery."

Dr. Balfour thought that we had heard too little of the constitutional treatment in these cases, and too much of the use of the gonge. He mentioned a case of diseased bone, in which, after laying open a sinus, and giving a hoy ad-liver oil, a very good ankle-joint had been left.

Mr. Fergusson remarked that of course no prudent surgeon would resort to the knife until all constitutional means had failed; it was to cases in which constitutional remedies failed that his observation applied. Mr. Hawkins's remarks did not shake the opinions which he (Mr. Fergusson) had advanced. His remarks had reference to local disease of the bone. He did not dispute the propriety of removing all the bone in this case, and in many others, but it was his conviction that the proper proceeding in the majority of cases was to remove only the diseased portion. He had seen hundreds of cases in which a small portion of the bone only was diseased, the remaining parts being quite healthy. As soon as the diseased portion was removed the healing process was remarkably rapid. There was danger of interfering with healthy bone, but the removal of the carious portion of the bone was attended usually by the best results. The subject altogether was too extensive to go fully into on that occasion, but it might be stated generally, as a rule, that it was better to remove only the diseased portion of bone in these cases. In some instances it might be necessary to remove all the bone.—*Lancet*, Feb. 4, 1854.

32. *On the incomplete Luxation of the Tibia forward.*—The third volume of the *Mémoires de la Société de Chirurgie de Paris* contains a paper on this subject by M. DÉSORMEAUX, illustrated by a case which came under his notice at the hospital Bon Secours. The patient became accidentally entangled in some machinery, by which accident direct violence was applied to the region of the knee, and a partial dislocation of the knee forward was the result. The luxation was reduced, but the patient subsequently died of consecutive disease. On examining the knee-joint, it was found that the articular capsule was uninjured, but it contained a little serosity mixed with blood; the ligamentum patellæ, the lateral ligaments, and the posterior and semilunar ligaments were healthy, and the crucial ligaments were infiltrated with blood. M. Désormeaux considers the principal symptom of this luxation to be the projection of the tibia forward, permitting the anterior part of the glenoid cavity of this bone to be distinguished by the touch; the projection of the condyles of the femur in the popliteal space, and the consequent increase of the antero-posterior diameter of the articulation, the absence of real shortening, and the position of the patella, the anterior surface of which looks forward and upwards, and presents remarkable depressions at its sides. The best method of reduction consists in the flexion of the limb, combined with a slight extension.—*Assoc. Med. Journ.* Dec. 23, 1853.

33. *Treatment of Dislocation complicated with Fracture.*—In September, 1851, a man, aged 68 years, came to M. RICHER with a dislocation of the upper extremity of the humerus, with fracture of the anatomical neck of that bone. He was then in a state of complete intoxication, but the next morning he was able to communicate the following details: He was descending a narrow staircase, when his foot suddenly tripped and he fell backwards. In this fall, the left shoulder struck the angle of one of the steps; and, when the man was lifted up, he could no longer use his arm, which was perfectly serviceable before the accident. The man was very thin, and his limbs were easily examined. In front of, and rather lower than the left acromion, there was an evident angular projection, at the summit of which was a deep ecchymosis, having a transverse direction; this was the point in which the patient said he had fallen. Behind and below the acromion was a visible depression, into which the index finger penetrated with facility, proving that the head of the humerus had passed out of the glenoid cavity. Above this depression, the acromion formed a well-marked projection, particularly when compared with the corresponding part of the opposite side. On carrying the hand into the

axilla, it first encountered a hard cord, stretched from the posterior border of the axillary cavity to the anterior, a little obliquely from below upwards and from behind forwards; this consisted of the flattened tendon of the latissimus dorsi. More posteriorly and internally, another thicker projection was observed. By carrying the hand to the summit of the axillary hollow, a tumour was found of an irregularly round shape, movable, and apparently isolated, for it could be moved in all directions. Suspecting that this tumour was merely the head of the humerus thrown out of its cavity, M. Richet rotated the lower end of the bone, but the tumour was not at all moved, nor was any crepitation perceived. These rotatory movements produced very great pain; and, on applying the hand to the angular projection above described at the anterior extremity of the shoulder, it was found to be affected by the rotatory movements impressed upon the inferior extremity of the humerus; this led M. Richet to ascertain that it was formed by the upper end of a fragment belonging to the body of the humerus. It was irregular, with rather well-marked dentations, some of which were entangled with the fibres of the deltoid. The movements of abduction and elevation were impossible; and flexion of the forearm upon the arm was effected with great difficulty.

The case was, therefore, evidently one of fracture of the surgical neck of the humerus, complicated with dislocation of the head of the bone. As the pain in all the muscles surrounding the shoulder-joint produced contractions, which prevented the apposition of the two fragments, the patient was put under the influence of chloroform, to obtain, if possible, a complete resolution of this muscular action, and to enable the examination to be concluded. In less than two minutes, the patient became quite insensible, with complete relaxation of the muscles. It was then easily ascertained—1st, that the head of the humerus was dislocated into the summit of the axillary hollow, where it formed an irregularly rounded tumour, very movable, and detached from the rest of the bone; 2d, that the upper end of the lower fragment of the humerus was displaced forwards under the deltoid; 3d, that there was another little fragment completely detached, but entangled in the fibres of the deltoid, and which had not previously been detected, in consequence of the contraction of this muscle.

After the patient was restored to consciousness, the lower portion of the bone was easily disengaged from the fibres of the deltoid, and crepitation was then perceived.

On the 12th of September, the patient was again put under the influence of chloroform. Taking advantage of the complete relaxation of the muscles, which ensued in a minute and a few seconds, M. Richet seized the man's arm, and, bringing it forwards and downwards, he disengaged very easily the upper extremity of the lower fragment from the deltoid fibres. The arm was then intrusted to an assistant, and M. Richet grasped the convexity of the shoulder with both his hands, the two thumbs resting on the acromial projection, while, with the four fingers of each hand directed towards the summit of the axilla, he endeavoured, by careful efforts, to bring back the head from within outwards towards the glenoid cavity. Notwithstanding the slight hold afforded by the fragment, it was felt to be yielding by degrees, and the reduction was soon completed, without any noise, and rather insensibly than suddenly. After that time, the two fragments remained in contact, and the regular rotundity of the shoulder was completely restored.

The next morning an apparatus was fitted, consisting of an axillary pad made of charpie, covered with a compress, carried up to the summit of the axilla, in order to prevent any fresh displacement in this part. The forearm was bent upon the arm at an acute angle, and the hand placed upon the sound shoulder, so that, the lower extremity of the humerus being carried forwards, the upper extremity of the fragment was carried backwards, in an opposite direction to that which it formerly took. The contact then appearing to be as perfect and secure as possible, the parts were fixed in this position by means of a bandage which left uncovered the convexity of the exposed shoulder, in order to allow the observation of any changes which might subsequently occur in this region.

On the 13th of September, the patient had slept well, and the shape of the shoulder was perfectly natural. On feeling the part, a rather considerable effusion of blood was found to have taken place into the articulation, and the splinter formerly mentioned was now perfectly appreciable at the anterior and external part of the shoulder.

On September 4, and following days, no new symptom occurred. The patient ate well and slept well, but he complained of numbness in the arm and forearm.

On October 4, the effusion of blood had disappeared. The bandage was removed, when it was ascertained that the reunion of the fragments was effected, and a simple sling was applied, which allowed of slight movements, sufficient to prevent ankylosis, but not sufficient to break the callus, or even to retard its formation.

On October 30, the bandages were removed, and the patient had a bath. The callus was perfectly solid, but the movements in the scapulo-humeral articulation were almost annihilated; and it was, in fact, observed that the movements of the arm were effected by the sliding of the scapula upon the thorax. The patient was, however, recommended to exercise the arm as much as possible.

On November 24, the patient was still in the hospital, and it was found that there was a very well marked degree of mobility in the scapulo-humeral articulations, which gave hopes of still further power of motion. The splinter formerly described remained still detached and movable, but, every time it was disturbed, the patient experienced severe pain. The numbness of the arm and forearm had almost disappeared.

On June 27, of the next year, the patient came to the hospital for another complaint. It was then ascertained that he had very little difficulty in moving his shoulder. He lifted his arm easily to his head, and executed all the other movements which he was directed to perform, without experiencing the slightest pain. The splinter had disappeared, or at least was hidden among the deltoid fibres, which had become developed by exercise to such a degree that the rotundity of the shoulder, compared with that of the opposite side, was perfectly normal.

M. Riehet, in commenting on this case, comes to the following conclusions:—

1. That, contrary to the opinion universally adopted, dislocations of the humerus and of the femur, complicated with fracture of the extremity of the dislocated bone, may and ought to be reduced immediately; and the fracture, thus brought back to a simple state, should be treated like other solutions of continuity of the bone.

2. That, to perform this reduction, the patient should be subjected to the most complete anaesthesia, in order that the muscular action may be entirely annihilated; and that, of all anaesthetic agents, chloroform appears hitherto to be the best.

3. That clinical experience, reasoning, and experiments upon the dead body, agree in demonstrating that, as the muscular power is the principal, and, in fact, the only obstacle to the replacement of the bone, so, when this is annihilated, it is not necessary to employ a lever of greater or less length to apply to it forces of extension, but that it is then sufficient to exercise directly upon the dislocated extremity pressure which may push back the head of the bone into the articular cavity.

4. That, in the very rare cases in which the fibrous tissues form an obstacle to the replacement of the bone in its cavity, it is to this method of pushing back the head that we must have recourse by preference, as being more rational and more efficient than extension.

5. That, if the proceeding by extension is to remain us a general method in the treatment of dislocations without fracture, yet we must admit that the proceeding by pushing back will be always, even in such cases, a powerful auxiliary; and, further, that alone it is applicable, to the exclusion of extension, in the treatment of dislocations, complicated with fracture of the dislocated bone.

—*Assoc. Med. Journ.* Dec. 9, from *Mémoires de la Société de Chirurgie de Paris*, tom. iii. fasc. 4.

34. *On the Formation of Inner Callus.*—Dr. ULRICH HILTY, in his inaugural dissertation, has described some experiments made with the view of investigating the formation of callus within the medullary canal, in the union of fractured bones. For this purpose, he inserted pegs of ivory and silver wire into the tibia in cats and rabbits; and in every case he found the foreign body surrounded by a deposit of inner callus, distinguishable from the surrounding bone by its white colour. When placed under the microscope, it exhibited numerous vascular canals, communicating with those of the old bone; while, in the bony mass itself, there existed a turbid hyaline substance, and round elongated bone corpuscles, with long and tortuous radiating canaliculi.

Dr. Hilty found the deposition of the inner callus to begin thus: Immediately after the irritation of the bony substance by the foreign body, the medulla became redder and firmer, and its vessels were distended with blood. Shortly thereafter, at the injured part, there was deposited, between the inner surface of the bone and the medulla, a greater or less amount of exudation, at first of a serous character, but afterwards of a gelatinous consistence. This gradually increased, until it either surrounded or bridged across the peg. The exudation was conical in shape—thickest near the peg, and tapering away towards the periphery. It began first to solidify at the periphery—some traces of cartilago being discoverable there in two or three days—and the smooth bony surface lying beneath became somewhat roughened and uneven. The cartilaginous formation afterwards gradually extended to the other parts of the exudation, and this process was generally completed by the fourth or sixth day. During this time, and in the same manner, ossification was also progressing, often with such rapidity that, after eight or ten days, the exudation was surrounded by a bony capsule, while periosteal callus, thrown out synchronously with this, was commonly, in the same space of time, merely cartilaginous in its structure.

This author describes with great minuteness the histological changes observed during these processes. These we cannot notice at any length, from our limited space. The exudation was at first a yellowish homogeneous mass, in which were seen fat-cells, altered blood-corpuscles, and some elementary fibres of connective tissue. Nucleated cartilage cells were formed in this, appearing first as dark spots or clear vesicles which became surrounded with an investing membrane. Calcareous granules were gradually deposited in these till ossification was complete.

From these investigations, as well as from his own experience in disease of bone, Prof. Meyer, of Zurich, deduces the following results: He considers—

1. That, in the union of fractured bones, callus is thrown out simultaneously by the endostom and the periosteum, but that the inner callus is of little importance as regards the healing process.

2. That what he terms "sclerosis" of bone—i. e. an obliteration of the medullary canal by hard osseous structure—is caused by hyperæmia of the endosteum, just as exostosis results from this condition of the periosteum.

3. That the thickening of the cancelli, occurring when the areolar texture of the articular extremities of bones is exposed, is caused by an increased osseous deposition, excited by the mechanical irritation of the endosteum.

4. That in this manner, also, are formed the compact lamellæ, lining the *foveæ glandulares*, formed in the cranial bones by the compression of the paccionian bodies.

5. That, in the case of malignant periosteal growths compressing the interior of the bones, the hardening of the contiguous osseous structure, and the obliteration of the medullary canal by bony stroma, are caused by the implication of the endostom, and are analogous to what occurs when the periosteum is affected by bony tumours growing outwards.

6. That the osseous capsule which envelops abscesses, occurring in the cancellous texture, is analogous to the external bone growth (*osteophytbildung*), so common in the vicinity of ulcers. He observes that it frequently happens to healthy bones that their structure becomes absorbed externally, while fresh osseous formation is actively going on in their centres; just as, in the process of their development, absorption occurs internally—to form the medullary canal—while new bone is being simultaneously deposited on their exterior.

This fact be considers explanatory of the condition of many flat bones—as those of the cranium, or the scapula, and the ileum—which, in their perfect condition, contain more or less spongy substance, and which, in old age, become often thin as paper, while, at the same time, they consist wholly of compact osseous tissue.—*Monthly Journ. Med. Sci.* Jan. 1854, from *Henle und Pfcuffer's Zeitschrift*, Bd. iii. heft 2.

35. *Wire Gauze for Bandages, Cradles, and Splints.*—Specimens of this article, invented by Mr. STARTIN, were exhibited to the Medical Society of London (Jan. 28, 1854). The material employed is flattened copper or iron wire, and costs about 1s. 4d. per square foot; and, if the expense were not an object, the materials might be plated. The usual mode of application is first to obtain a pattern for the splint by means of cartridge-paper, and then carefully to cut the sheet of gauze to the pattern. The splint further requires that the edges should be cut transversely at intervals, and the free edges covered with thin lead or adhesive plaster. Folds of linen, wet with water, are placed upon the limb underneath the splint, and the whole apparatus is kept in position by rollers or tapes. The merits of the invention were said to be those of lightness, cheapness, coolness, and affording the opportunity of readily applying lotions without disturbing the bandages. It was recommended in fractures, resections of the joints, and, indeed, in almost all instances in which cradles and splints are ordinarily employed.—*Med. Times and Gaz.* Feb. 4, 1854.

36. *New Operation on the Foot.*—Dr. GAY exhibited to the Medical Society of London (Jan. 14, 1854) drawings, and gave the particulars, of a case in which he had performed resection of the foot on a new plan. He entered into some details as to the several forms in which resection had hitherto been practised, and then considered the propriety of leaving the great toe entire when the case called for the removal of all the other metatarsal and phalangeal bones. He stated that the objections hitherto urged against such a procedure were—first, the inconvenience which would attend the projecting part; and, secondly, the want of sufficient attachment to the internal cuneiform bone, to render the toe of any service in progression. He was now, however, of opinion that, if the middle cuneiform bone he also allowed to remain, the attachment will be consolidated, and the whole toe made serviceable. His patient was aged 22 when operated upon in August last; and now (after five months) is able to walk with ease, and is obtaining yet greater facility in progression. Mr. Gay especially referred to two circumstances as worthy of note: 1. That the toe becomes curved outwards, and thus receives the pressure at about the point where the ball of the little toe formerly received it. This facilitates progression. 2. The absence of the other toes seems to be compensated for by an increasing muscular and bony development of this, the remaining toe; and it is probable that the great toe will acquire far more than its normal size and power.—*Ibid.*

37. *Treatment of Aneurism and other Vascular Tumours by the Injection of a Solution of Perchloride of Iron.*—During the present year, the attention of French surgeons has been closely directed to a new method of treating aneurisms, viz: that of producing coagulation of the blood in the aneurism by injecting a few drops of a solution of perchloride of iron into the sac. The merit of first bringing this method prominently under notice is due to the late M. PRAYAZ, of LYONS. We propose to give an abstract of what has been said and written for and against this method.

History.—In a letter to M. Marjolin, published in *L'Union Médicale* for May 12, M. Prayaz gives the history of the treatment.

The author states that, in the year 1828, he commenced experiments on the means of preventing the absorption of poisons. Cauterization of the poisoned wounds by galvanism appeared to succeed best; this he first tried in cases of bites by vipers, and by Indian snakes, and of mad dogs. In his experiments, he observed the readiness with which blood coagulated under the action of galvanism; but it did not occur to him to apply this principle to the treatment of aneurism, until M. Velpeau had stated that a coagulum was produced by in-

troducing a needle half-way into a vessel, and there leaving it. This led M. Pravaz, by a series of experiments, to the conviction that galvano-puncture was likely to be a very successful treatment; and he communicated his idea, in 1831, to several surgeons. For many years this method remained in abeyance, being merely referred to in works on medicine and surgery; and it was not until 1845 that M. Pétrequin successfully employed galvano-puncture in aneurismal tumour in the course of the temporal artery. M. Pravaz observed with interest the applications of galvano-puncture which were made since 1845 in most countries of Europe. He was led to believe that this method, from the care which it required, from the frequent imperfection of the apparatus, and, perhaps, from a certain idiosyncrasy in the blood, often failed.

In 1851, he first attempted to produce coagulation by employing voltaic electricity as a means of conveying through the tissues one of the elements of a saline solution placed on the part. This plan had been partly proposed by Strambio in 1847. M. Pravaz thus describes his discovery of the treatment by injection of perchloride of iron:—

“In the course of the experiments which I have related, the object of which was either to abolish acupuncture while galvanism was retained, or to reduce the operation to the introduction of a single needle, I observed that perchloride of iron instantaneously caused a solution of albumen to coagulate in mass. Considering, at the same time, that the preparations of iron are generally harmless, when administered in a moderate dose, I was led to reflect whether, in place of endeavouring to suppress acupuncture in the treatment of aneurism, it would not be better to renounce electricity, and retain puncture as a means of introducing the coagulating material into the sac. I thought to realize that idea by means of the trocar, which is used in the exploration of tumours. Those, however, which are in common use are not sufficiently delicate; and I waited the opportunity of a visit to Paris to have some made fit for the end which I proposed. M. Charrière perfectly fulfilled my wishes in this respect. I obtained, also, a small syringe, the piston of which was moved by means of a screw, so that the injection was performed steadily and continuously, and could be regulated at the will of the operator.

“On my return to Lyons, I attempted, with the assistance of my son, to produce coagulation of the blood in the carotid artery of a rabbit; but the artery was too delicate to allow the trocar to be easily introduced without transfixing it. . . . I had proposed to recommence my experiments on larger animals, when a severe illness interrupted my researches. They would probably have been altogether suspended, if the stay of M. Lallemand in my house had not both restored me to health and reanimated my scientific ardour.”

M. Pravaz and Lallemand then performed experiments in conjunction, in which M. Pétrequin participated for a time.

“The limits as to quantity which M. Lallemand and myself have determined, cannot be passed without producing symptoms of intoxication, and dissolution of the clot; but the injection of an excessive quantity may give rise to severe inflammation of the sac, consecutive ulceration, and expulsion of the coagulum.

“ . . . M. Lallemand and I have estimated the quantity required to coagulate each *centilitre* (about one-fourth of an ounce) of blood as being three drops. I would even go below this limit; but, in order to furnish a sure guide to the operator, the degree of concentration of the solution of perchloride of iron must be observed.”

In an article published in the *Gazette Medicale* for October 1, M. Pétrequin, of Lyons, claims to share equally with M. Pravaz the merit of originating this mode of treatment. He states that, in 1845, he proposed to himself to search for an agent possessing the properties of fluidity, smallness of volume, capability of producing coagulation without carbonizing the blood, non-liability to produce excessive irritation, and capability of being absorbed without danger. He also says that, in 1852, M. Pravaz proposed to him to perform a series of experiments with perchloride of iron. They performed some experiments in conjunction; but, subsequently, M. Pétrequin continued his researches independently; experimenting, however, with perchloride of iron and manganese.

He does not, however, appear to have actually employed this agent in the treatment of aneurism.

The *mode of operation* is thus described by M. Lallemand: "The method proposed by M. Pravaz consists in coagulating the blood in the vessels by the injection of a few drops of a solution of perchloride of iron at its maximum of concentration. The injection is effected by means of a very delicate trocar, which must be introduced very obliquely through the walls of the artery by a kind of rotatory movement. To this trocar is fitted a syringe, of which the piston moves by means of a screw, so that the liquid may be injected steadily, and the quantity accurately measured. At this time of operating, the flow of blood in the vessel must be arrested." In the treatment of aneurism, the solution must be introduced into the aneurismal sac, and the artery must be compressed for four or five minutes.

Cases.—At the meeting of the Academy of Medicine on the 8th of November, M. Malgaigne read a paper on the treatment of aneurism according to the method of M. Pravaz. The article is published at length in the *Union Médicale* for November 10. The author passed in review the history of this operation from the reading of a letter from M. Lallemand before the Academy of Sciences up to the present time. He referred to the experiments of Lallemand, Giraldès, and Dehout, and to the cases of MM. Raoult Deslongchamps, Niepce, Serre, Velpeau, Lenoir, Soulé, Alquié, Defour, Johert, and himself.

We have collected the reports of several cases from the journals in which they were reported, and shall avail ourselves of M. Malgaigne's essay in this history of others. The whole of these cases, from No. I. to XI. inclusive, will be found in M. Malgaigne's paper.

CASE I.—At the meeting of the Surgical Society of Paris on March 30, M. Larrey related a case communicated to him by M. Raoult-Deslongchamps. The disease was aneurism of the supraorbital artery, of the size of a small pigeon's-egg. It could be emptied by pressure. M. Deslongchamps injected a few drops of the concentrated solution of the perchloride, but at first failed, in consequence of the formation of a clot at the end of the canula. The next day, ten or twelve more drops were injected; and, in three minutes, the tumour became hard, and the pulsations disappeared. The swelling after this continued to diminish, until, at the end of a month, there was no trace of the aneurism beyond a little redness and slight thickening of the skin. (Abridged from *L'Union Médicale*, April 9, 1853.)

At a meeting of the Academy of Surgery on May 4, M. Larrey read a letter from M. Deslongchamps, in which the subsequent history of his case was reported.

On March 13, in the situation of the aneurism, the skin was a little more red and elevated than on the opposite side. There was also some thickening and induration. On April 15, M. Deslongchamps saw the man, who told him that he had been seized with a catarrh (from exposure to cold) on the 7th, and that he had had violent fits of coughing, which, in two or three days, caused the situation of the tumour to become more red and swollen. He also felt pulsation in it, which increased for a day or two. The cough then diminishing, the swelling and pulsation became less after the patient had worked some hours at his forge (which he had not ceased to do since discharged by M. Deslongchamps). On April 15, M. Deslongchamps sent for him, to ascertain the results of the operation. He then found that, in the situation of, or rather a little to the outside of, the primary affection, there was a flattened tumour, with ill-defined edges, and very red, but not uniformly so. On applying the fingers, feeble pulsations were felt, but only on the lower half.

M. Deslongchamps did not think that this was a return of the disease, but merely a result of the enlargement of the collateral arteries, which had taken place in the formation of the original aneurism—in fact, an erectile tumour.

M. Robert at first, and afterwards M. Malgaigne, have doubted whether the tumour first operated on was an aneurism at all.

CASE II.—On April 25, a case was related to the Academy of Sciences, which had been operated on by M. Niepce. The aneurism was popliteal; five minutes after injecting the perchloride of iron, the tumour became very hard; and, on

removing pressure from the femoral artery, pulsation was found to have ceased in the sac. On the next and following days, there was severe inflammation in the parts operated on. On the eleventh day, fluctuation was perceived at the inner side of the tumour, and about two and a half drachms of purulent serum escaped on making a small puncture. On the twentieth day, the place of the tumour was occupied by a hard cicatrix of the size of a nut.

CASE III.—At the meeting of the Academy of Sciences on May 9, M. Lallemand communicated, for M. Serre, of Alais, the particulars of a case of varicose aneurism at the elbow, which had been successfully treated by the method of M. Pravaz. The clot was soon formed; pulsation did not return when pressure was removed from the bronchial artery; and, at a later period, pulsation disappeared in the radial and ulnar arteries. Inflammation, with suppuration, took place in the vicinity of the sac; an eschar was detached from the sac, without producing the least hemorrhage; and cicatrization advanced rapidly.

M. Malgaigne acknowledges that in the cases of MM. Niepee and Serre—true aneurisms—the method appears to have succeeded. Yet the inflammation and suppuration of the sac in the former case, and the suppuration and sloughing in the latter, show that even these cases are not unattended with danger.

CASE IV.—This case is given in the *Revue Méd. Chir.* for October, 1853, and in M. Malgaigne's article. A student had false aneurism at the bend of the arm; it had followed a wound made in venesection. It had been present for three months, and was as large as a hen's egg. On May 21, M. Velpeau carefully injected eight drops of solution of perchloride of iron, procured from M. Burin du Buisson. The consistence of the tumour appeared augmented; but, on removing pressure which had been applied to the brachial artery, pulsation returned. On June 11, ten drops were injected, but without success. The tumour increased in size and became inflamed; and, on June 18, M. Velpeau tied the brachial artery. After a little trouble, produced by ulceration and discharging of clots from the tumour, the patient was discharged cured, on August 4.

CASE V.—On May 19, 1853, M. Lenoir operated for popliteal aneurism, on a man aged 62. He injected seven drops of the solution of perchloride of iron, without producing any effect on the pulsations. On May 31, sixteen drops were injected without results; and, on June 18, twelve drops of M. Dubuisson's solution were used. On June 23, the patient was seized with pain in the affected part attended with febrile symptoms. The pulsations had, since the first injection, become much weaker. On June 24, the popliteal region was hot, tense, and very tender; the pulse was 120; the skin very hot and dry; the patient moaned constantly; the superficial veins of the leg and thigh were more distended than usual. The patient was bled, and poultices and mercurial frictions were applied to the tumour. The symptoms went on increasing; extreme prostration and delirium appeared; and the patient died on June 28.

An examination of the body showed numerous points of ossification on the artery. Blood was effused all round the tumour, and in the neighbouring muscles. The swelling was hard, and was filled with a sanguineous mass, adhering to its walls. The femoral vein, at the level of the tumour, was flattened, and almost impermenible; higher up, it was filled with a sanious fluid, which did not extend into the veins of the pelvis. The pericardium contained some serosity, and presented traces of old pericarditis.

CASE VI.—A patient was admitted into St. Andrew's Hospital, at Bordenaux, with aneurism of the femoral artery. M. Soulé injected four drops of a solution of perchloride of iron. The tumour immediately became hard. Compression was maintained for a quarter of an hour; when it was removed, pulsation immediately returned. Moderate pressure on the artery was kept up; and, five days after the first operation, M. Soulé injected seven drops. On this occasion, severe pain was produced; the patient could not sleep; the tumour inflamed and increased in size; and complete coagulation could not be obtained. Fearing ulceration and hemorrhage, M. Soulé tied the femoral artery about five weeks after the last injection. The patient recovered.

CASE VII.—In a case of traumatic aneurism, of the size of a cherry, seated on the posterior tibial artery, near the internal malleolus, and from which there

had several times been hemorrhage, M. Soulé injected some of the solution, and plugged the wound with some charpie impregnated with it, and applied a compress. In three days, no result having been produced, he opened the tumour, and found that the artery had completely divided. It could not be tied; but pressure, by means of plugs of charpie dipped in Pagliari's solution, was successful.

CASE VIII.—M. Alquié, of Montpellier, relates the following case in the *Revue Thérapeutique du Midi*. M., aged 50, accidentally wounded his ulnar artery, on June 20, while cutting wood. On July 16, there was a pulsating tumour, of the size of a pigeon's egg, on the upper part of the hypothenar eminence; it was covered by a small suppurating wound. On the 20th, five drops of solution of perchloride of iron, with five drops of water, were injected; and a compress dipped in the solution was laid on the tumour. The pulsation diminished, but did not entirely cease. On July 21 and 22, there was severe pain, and the pulsations had become stronger. On the 23d and 24th, erysipelatous redness, accompanied by swelling and tension, extended from the hand to the elbow. The symptoms went on increasing; and, on the 27th, there was an escape of purulent fluid at the seat of the tumour; ulceration was also extended along the forearm. On the 29th, the pulsation in the tumour continuing, and signs of impending rupture appearing, the brachial artery was tied. The pulsation ceased, but reappeared on August 2; and, on the 7th, copious hemorrhage took place from the wound over the aneurism. The ulnar artery and a collateral branch were tied at the lower part of the arm. After this, the pulsations were arrested; the tumour diminished; and the patient was discharged cured on September 18.

CASE IX.—M. Dufour thrice injected a large aneurism of the right carotid artery. Violent inflammation was produced; the tumour sloughed and burst, and the patient died of hemorrhage. (*Annales Cliniques de Montpellier*, April 10, 1853.)

CASE X.—M. Jobert has operated on a patient. Gangrene and death supervened. The particulars of this case have not yet been published; it is merely mentioned by M. Malgaigne.

CASE XI.—M. Malgaigne (*loc. cit.*) relates a case which came under his own care in the Hôpital St. Louis. A workman in a soda-water manufactory, aged 29, was admitted, on July 30, with traumatic aneurism at the bend of the elbow. M. Malgaigne at first applied pressure without effect, and was deterred from applying the ligature by the fear of producing gangrene, especially as the median nerve had been injured. He then determined to inject the sac; taking the precaution of applying pressure *above*, in order that coagulation might not be prevented by the impulse of the blood sent from the heart; and *below*, that the injected matter might not be carried into the smaller ramifications of the vessel. He was obliged to puncture the tumour in several places, before he could arrive at its interior. He injected five drops. Compression being removed, pulsation was not felt in the radial; but in the course of the day it returned. The punctures healed readily; but, on the fourth or fifth day, the patient complained of severe pain in the interior of the sac. In three days it had become very severe, and the sac was much enlarged, and had a blackish spot on its surface. Fearing that rupture might take place, M. Malgaigne applied a ligature with some difficulty, from the inflammatory engorgement of that arm. Pulsation immediately ceased in the tumour and in the radial artery. The patient had erysipelas of the arm, and rheumatism in the knees, which were successfully treated by poultices and veratrine. After some days, finding that the tumour did not diminish, M. Malgaigne opened it, and removed a large coagulum, which contained only blood-corpuscles.

In some remarks made with reference to his case (Case V.) (*Gazette des Hôpitaux*, Oct. 25), M. Lenoir, after describing the instrument of M. Pravaz, and the manner of using it, said that it did not act so exactly as he could desire. A clot of greater or less density would be formed in the canula of the syringe, by the solution of perchloride meeting the blood; and the resistance thereby produced is sometimes so great as to force back the whole of the injec-

tioa behiad the piston. In either case, it would not be possible to form any other than an approximative idea of the number of drops injected.

To remedy the first inconvenience—the obstruction of the cannula by a clot—M. Lenoir fitted to the syringe a long cannula, capable of being introduced through the cannula of the trocar. With this cannula, the solution is introduced into the current of the aneurismal sac, without risk of coagulating the blood in the cannula of the trocar. To ascertain whether there was any reflux of the fluid behind the piston, M. Lenoir has used a glass syringe, so as to observe all that passes in its interior.

There is, according to M. Lenoir, another difficulty, viz: to be able to introduce the point of the instrument precisely into the blood in the aneurism. In his own case, he failed in at once reaching the blood; and he believes that he introduced the instrument into the fibrinous deposit in the interior of the sac. The repetition of exploratory punctures, he justly observes, might produce inflammation and suppuration of the aneurism. This difficulty of finding the interior of the sac may not always present itself; but M. Lenoir would be inclined, if it should again occur to him, to inject the hemostatic fluid into the part of the artery immediately above or below the aneurism. In this way, there would be only a small quantity injected, a healthy part of the vessel would be operated on, and the same results would be produced.

M. Lenoir also referred to the danger of wounding important structures in the vicinity. In his own case, he seemed to have injured the vein—probably in one of his exploratory punctures—and this was more likely, as the vein was flattened, and adherent to the aneurism, and almost impermeable to blood; hence giving no indication of its locality.

Dangers, Difficulties, and Precautions.—In the *Bulletin Gén. de Thérap.* for May 15, Dr. Debout, the editor of that periodical, offers some remarks on the subject. He had performed some experiments with the view of determining how much of the solution of perchloride of iron could be used without producing arteritis. He described the appearances found in a horse, into whose right carotid he had injected seven drops, and into the left fifteen drops. The caliber of the right carotid artery was free, and its lining membrane quite healthy. The left carotid, on the other hand, presented redness, thickening of the membrane, and deposit of pus, with which was mixed the debris of the coagulum.

Dr. Debout points out the importance of pressure as an auxiliary, in preventing the coagulum from being broken up by the current of blood. Three or four years ago, he produced coagulation of the blood in a false aneurism at the bend of the arm. Pressure on the humeral artery was not maintained, and the clot was redissolved. Unless pressure is maintained, he believes that, to produce a clot capable of resisting the current of blood in *mea*, it will be necessary to use such a quantity of the solution of perchloride of iron as will expose the patient to the danger of arteritis. If proper precautions be observed, Dr. Debout is in favour of the operation.

At a meeting of the Academy of Sciences on May 9, M. Lallemand observed that “the success which had already attended M. Pravaz’s method of treatment, confirmed him in his opinion of its superiority to all other methods. He was firmly persuaded that the method of injection would produce as complete a revolution in the treatment of aneurism as lithotomy had produced in the treatment of calculous diseases. The first instruments used in the latter operation were complicated and imperfect, and, for a long time, successful cases were mingled with severe accidents and numerous reverses; but now lithotomy is not what it was at its commencement. It will no doubt one day be the same with the method of M. Pravaz.”

M. Debout also expressed himself in favour of the operation, when performed with proper precautions, such as those to which we have already referred.

M. Malgaigne is an opponent of the method. He points out in his paper, which we have quoted, that, in eleven cases, four died, eleven had severe symptoms, and two were successful. He concludes in the following terms: “With regard to aneurisms, although the possibility of curing them by the injection of perchloride of iron be placed beyond doubt, the successful cases are so rare, obtained at the price of so many accidents, and counterbalanced by so many

reverses, and even by deaths, that, at present, I think that no prudent surgeon could expose his patients to the results of such a disastrous mode of treatment."

An animated discussion followed the reading of M. Malgaigne's paper.

M. Moreau believed that the operation ought to be at once and totally discarded.

M. Roux and M. Velpeu agreed that there was little evidence as yet in favour of the operation, but would suggest a more extended course of experiments.

We do not entirely agree with the sweeping condemnation of M. Malgaigne; and would prefer following, and recommending our readers to follow, the more moderate advice of MM. Roux and Velpeu. Yet the operation is one which should not be undertaken without due reflection on its possible dangers, nor until treatment by compression has been tried and found ineffectual. As regards the relative merits of injection and ligature, the former appears at first sight to possess an advantage over the latter, in not involving impediment of the circulation in any collateral branches which may be given off between the aneurism and the seat of ligature.

The principal difficulties in the operation appear to us to be: *first*, to determine the quantity of the fluid which shall, when injected, coagulate the blood, and at the same time set up only a moderate degree of inflammatory reaction in the walls of the aneurismal sac; *second*, to insure the non-removal of the coagulum. The first of these can only be removed by experiment and experience; and, with regard to the second, we would advise any surgeon who performs the operation of injecting an aneurism, to maintain for some time moderate pressure on the artery above the aneurism—sufficient to moderate the flow of blood, yet not so great as to entirely cut off the supply.

Treatment of Varix.—The solution of perchloride of iron has also been employed in the treatment of varix. M. Pétrequin has injected the perchloride of iron and manganese in several cases of varicose enlargement of the saphenous vein. The effect produced was obliteration of the vein.

In the *Bulletin de Thérapeutique*, for September 15, Dr. Debout refers to six cases of varicose veins operated on by M. Desgranges, of Lyons. In five, there were no remarkable symptoms; but the sixth patient died, after an attack of inflammation of the whole upper third of the leg.

This plan of treatment is worthy of further investigation. In the mean time, the following remarks by Dr. Debout should be borne in mind:—

"It is not enough that the operation succeed, and that the patients leave the hospital cured of the disease on account of which they have been admitted. The cure must be permanent. If, after a longer or shorter interval, the disease reappears, the performance of the operation has been a mere waste of labour and time; and it becomes the duty of the surgeon to abandon the plan, however innocent it may appear to be. . . . In the Bicêtre, we have seen a great number of old persons, in whom the obliteration of varices had been in vain attempted. After a greater or shorter lapse of time, they were always reproduced. When the caliber of the vessel is closed at one point, the blood takes another course—distends the small veins. If these anastomoses are not actually developed, so as to reproduce the disease, they at least serve to convey the blood into the varicose vein below the obliterated portion. . . . In making these remarks, we only wish to call the attention of surgeons to all the elements of the problem which they attempt to solve."—*Assoc. Med. Journ.* Dec. 9, 1853.

38. *Best Mode of employing Galvano-puncture in Aneurisms and Varicose Veins.* By M. STEINLIN.—Baumgarten and Würtemberg had, by actual experiments, obtained the following results: 1. The negative pole alone gives rise to no coagulation. 2. The two poles used together produce but a very slow, feeble, and incomplete coagulation. 3. The positive pole alone produces coagulation very rapidly, completely, and infallibly. The *Weiner Zeitschrift* publishes some further experiments of M. Steinlin, which he performed in such a manner that the effects of galvano-punctures could be immediately seen, which circum-

stance could not exist in Banmgarten's experiments, as the latter were performed upon living men or animals. M. Steinlin used principally albumen. We have not space for full details of these experiments, but shall merely state that the above propositions were completely verified. M. Steinlin advises a combination of zinc and lead, or tin, to be used in galvanopuncture; or to have the steel needles covered with a layer of zinc. The mode of performing galvanopuncture is as follows: The needles are thrust into the aneurismal tumour, or the varicose vein, and then connected with the positive poles; after which the negative pole is brought in contact with a platinum plate, and placed on the skin in the vicinity of the aneurism. The integument should be moistened with a dilute acid or a saline solution. Instead of the platinum plate, a sponge dipped in a saline solution may be used.—*Lancet*, Feb. 18, 1854.

39. *Treatment of Nævus by Tartar Emetic Plaster.*—Dr. SUMMING read to the Westminster Medical and Surgical Society (Feb. 17, 1854) a paper on this subject. After alluding to the various methods that have been adopted in the treatment of these cases, and to the objections which apply to many of them, he stated that the most satisfactory cures had resulted from the inflammatory and ulcerative processes being spontaneously set up in the tumours, and producing the obliteration of the enlarged vessels by suppuration. He then mentioned Mr. Hodgson's plan of vaccinating the tumours, for the purpose of exciting the adhesive inflammation, but regarded it as a doubtful method of cure, since, though the tumour might be studded over with punctures, only two or three vesicles might arise, and only a partial obliteration ensue. He suggested, therefore, the more effectual plan of treatment by tartar emetic, the method of applying which will best be illustrated by the following case: A child, aged nine months, was brought to him on account of its having lost a large quantity of blood from a vascular nævus on the right temple. The side and central portions of the tumour had been removed by the vaccinating process some time previously. Pressure and cold astringent lotions were first used unsuccessfully. He then determined to use tartar emetic, hoping that, as the eruption produced by this agent resembled that occasioned by the vaccine matter, it might succeed in obliterating the distended vessels. A compound of *fifteen grains of tartar emetic mixed with one drachm of galbanum plaster* was spread on a piece of thin leather, cut accurately to the size of the tumour, and applied to the nævus. On the third day, inflammatory redness had occurred without causing much pain or irritation. On the seventh and eighth days, the pustules appeared, and, in order to secure as many as possible, the plaster had been pressed gently down over the pustules daily, until it was removed on the ninth day, at which time the eruption had completely involved the diseased structure. The pustules ran through their usual course, and in due time a slough was detached, and the ulcerated surface healed rapidly, the resulting cicatrix being scarcely noticed. Eight similar cases were then successively narrated, in all of which the same simple method of treatment was adopted with like success, the only exception being in one of them where the cure was only partial, in consequence of the tumour having been situated too near the angle of the orbit to permit the free use of the tartar emetic plaster. In all the other cases, the scars which resulted were comparatively slight. He then exhibited a patient on whom he had thus operated for two nævi, one of which being situated on either brow; the cicatrices which had followed, though large, were not unsightly.—*Lancet*, Feb. 25, 1854.

40. *Treatment of Erectile Tumours by a new Method of Ligature.*—In the third volume of the *Mémoires de la Société de Chirurgie* of Paris, there is a paper on the treatment of erectile tumours, by M. RIGAL. After reviewing the different methods hitherto employed in the treatment of these affections, M. Rigal recommends the ligature as the preferable proceeding, employed in a manner peculiar to himself. It consists in using a multiple ligature, the loops of which are tied beneath strong pins, and thus strangle the tumour without running the risk of allowing the least part of it to escape. The following is the plan described by M. Rigal, in one of his recorded cases: A sewing needle of suffi-

cient strength was carried across the tumour and beneath it, drawing the two ends of a thread through the puncture. A second needle is passed in the same manner below the tumour; their passage thus divided the tumour into three parts of about equal size. Each of the threads was then cut off close to the needles, and thus there were two ligatures free in each of the passages. Then a small and rather strong curved needle was plunged below the upper extremity of the tumour, and was made to pass out on the opposite side. The two extremities of one of the threads were then firmly tied below the needle; the same proceeding was taken at the other end of the tumour. The middle part was perforated by another needle, and one of the upper, and one of the lower threads were tied together beneath it, thus completely strangulating the middle portion of the tumour. The interlacement of the threads, although easily demonstrated by diagrams, is however too complicated for verbal description; but it is sufficient to state, that when the threads are all drawn tightly together, the result was the separation of the erectile tumour from the surrounding parts. The ends of the pins were removed by the cutting pliers. The tumour daily acquired a deeper and deeper brownish tint; it hardened as it became dry. Soon afterwards, the furrow marking the line of strangulation began to ulcerate, pouring out a few drops of well-conditioned pus; and, on the eighth day, the erectile tissue dropped off spontaneously, bringing away the pins and the loops of thread. Although the number of the ligatures and of the pins requires to be varied according to the size and the situation of the tumour, the principles of the operation remain always the same; and no deviation was adopted in any of the operations of M. Rigal, who illustrates his observations by the record of seventeen cases, all of which were successful.

The conclusions arrived at by M. Rigal are the following: namely, that the ligature above described, and which M. Rigal calls the *ligature à chaîne enchevillée*, constitutes a new method for the removal of erectile tumours; that it is applicable not only to pedunculated tumours, but also to morbid productions reposing upon broad bases; that it may be employed upon all the regions of the face and trunk; that it prevents the hemorrhage which accompanies or immediately follows a sanguinary operation, and that which may probably result from the falling of mortified tumours; that its efficacy, its safety, and the little influence which it exercises upon the economy, appear to depend directly upon the energy of the constriction, on the instantaneous isolation, and the immediate death of the parts comprised within the double inclosure of its knots; that the scars which result are firm, movable, and of a remarkable smoothness, and are obtained by the aid of very simple dressings; that the operation is rapidly performed, and that the presence of the pins causes no pain, even in children; that this kind of ligature permits the operator to spare a more or less considerable portion of a movable structure, such as the lips and the eyelids, even when two-thirds of the thickness of these organs have been involved; and that, although it may not be adapted for every case, it will yet be found the most appropriate treatment in a great many instances.—*Assoc. Med. Journ.* Dec. 23, 1853.

41. *A new Mode of Tying Vessels.*—Prof. MATTEI, of Corsica, proposes a new kind of ligature, consisting of two loops, intercrossed, and with the ends in opposite directions. The end of the vessel is placed between these loops, and constricted by pulling at the ends; or, if it is an entire and undetached trunk which has to be tied, one loop is first passed around the vessel in one direction, and then the other around it in a contrary direction, taking care to thread the ends in such a way around the silk forming the first loop, as to secure the necessary intercrossing. If the vessel is of large size, the ends of the loops are made to have an extra turn upon each other. After the vessel is tied, one end of each loop is cut away close to the vessel, and the other end is brought out of the wound, the two remaining ends being disposed as nearly as possible in opposite directions. In this position they are allowed to remain until the vessel is obliterated, and then they are removed by gentle traction at each of the protruding ends, each loop slipping away from the other with perfect readiness, and without in any way disturbing the parts. In some cases, also, M. Mattei

does not clip away any part of the loops, but, attaching a thread to their ends, and bringing these threads out of the wound along with the ends of the loops, he is able to bring away the loops by pulling at the threads attached to them.

The grand advantage of this process is, that, instead of having to remain until the included portion has been slowly eaten through by absorption, the ligature may be removed as soon as the vessel is obstructed; and thus one grand impediment to the process of healing by the first intention is removed. Another advantage is, that the doing away with the ulcerative process lessens the risk of secondary hemorrhage.

M. Mattei has tested the applicability of his plan in amputations of the breast, leg, and arm. He removed the ligatures from the principal vessels on the fourth or fifth day, and from the smaller vessels in the course of the next day, and without any loss of blood. But he has not yet had an opportunity of experimenting upon the femoral or larger vessels.—*Ranking's Abstract*, vol. xviii. from *Revue Méd.-Chirurg.* April, 1853.

42. *Ligature of the Common Iliac for Aneurism of the Gluteal Artery.*—Prof. C. W. F. UNNE relates the particulars of ten cases of gluteal aneurism, in which the gluteal artery was tied three times, the internal iliac six times, and the common iliac once. It appears that the common iliac has been tied about eighteen times. In six of these, the patients recovered; in the others, death happening in periods varying from two hours to eight months.

The patient M. Uhde operated upon was a smith, *æt.* 26, who had long been afflicted with rheumatism, and who was then suffering from violent pain in the thigh, in consequence of the pressure of the aneurism upon the principal nerves of the limb. The common iliac was tied in the usual manner upon the 7th October, 1852, and death followed on the 11th. On examination, the wound was found in a healthy state, but the areolar tissue surrounding the iliac vessels was infiltrated with pus, and the superjacent peritoneum covered with a thin layer of lymph. The gluteal artery within the pelvis was somewhat dilated. The site of the gluteus medius was occupied by the sac of the aneurism, and there was scarcely a single relic of the muscle remaining. The sac itself was filled with coagulum.—*Ranking's Abstract*, vol. xviii. from *Deutsche Klinik*, No. 8, 1853.

43. *Puncture of Chest by a Needle; Probable Wound of the Heart; Extraction of Needle; Death.*—Dr. W. M. DONIX relates the following case, which occurred in Prof. Syme's surgical ward:—

On the morning of Thursday, September 9, 1852, an Irish woman, carrying in her arms an infant of four months old, presented herself at the surgical waiting room. She stated that a needle, sticking in her own dress, had accidentally been forced into the child's chest on the day previous. The child, from the time of the accident was in the greatest distress, crying constantly, and never remaining quiet for a moment. The mother carried the child to a medical man this morning. He made an attempt to extract the needle, but, failing, recommended her to go to the Surgical Hospital. On examining the front of the chest, I found a small wound about an inch below the left nipple, and a little nearer the mesial line. I placed my finger upon it, and felt distinctly a hard point moving up and down under the skin, with each respiratory movement of the chest. Having slightly enlarged the external wound, I succeeded, after a trial or two, in catching the needle under the nail of my left fore-finger, and retaining it opposite the external orifice. Having done this, I waited until the child ceased to cry, when I seized the needle with a pair of Mr. Syme's eyed-forceps, and extracted it by a combined drawing and twisting movement. Two or three drops of yellowish serous fluid oozed from the wound after the removal of the needle. The child instantly ceased to cry, and took the mother's breast, which it had refused prior to the extraction of the needle. The mother was directed to give the child a teaspoonful of castor oil, and to keep him perfectly quiet and moderately warm.

The following measurements were taken:—

Distance between nipples, $3\frac{1}{2}$ inches.

Distance between wound and middle line of the body, $1\frac{1}{2}$ inch.

From left nipple to wound, $1\frac{1}{8}$ inch.

On Friday, I again examined the child. I found it restless and uncomfortable. Skin hot and dry; pulse about 120 in the minute. Heart's sounds normal in character, somewhat muffled, and the apex could nowhere be felt punctuate. Præcordial dulness considerably increased in the upward and transverse direction. Abdomen was much distended and tympanitic. Respirations were very rapid, but nothing abnormal could be detected in the lungs or pleura by percussion or auscultation. An accurate examination was rendered very difficult, from the restlessness and crying of the child, and the excessive filthiness of the mother. Perfect rest was enjoined, and, as the bowels had not been moved, a second dose of castor oil was ordered to be given. Next day (Saturday), in consequence of indisposition, I was unable to visit the child, but sent Mr. John Brown, who was at that time acting as dresser in the clinical-surgical wards, to see the case for me.

Mr. Brown found the child worse than on the previous day. The bowels had been moved freely by the castor oil. Skin still hot and dry; respirations quick, laboured, entirely thoracic; pulse quick and feeble, but regular. Præcordial dulness extended vertically, commencing higher than normal; great distension of abdomen; eyeballs turned up. The treatment consisted of the administration of small doses of a mixture of equal parts of hydr. c. creta and Dover's powder. A teaspoonful of wine to be given occasionally.

On Sunday (September 12), I visited the child. I found the cardiac dulness evidently increased; it was difficult to hear the heart's sounds, from the extreme rapidity of its action. Respirations rapid and very feeble; child evidently sinking. An additional allowance of wine was ordered. The child died in the course of the day.

I went the next day, with instruments in my pocket, to endeavour to procure an examination of the body; this was obstinately refused by the parents.

An interesting question at once presents itself: What organ did this needle penetrate.

Professors Syme and Goodsir, to whom I related the case, were both of opinion that the needle must have entered the pericardium or the heart. I think it probable that the needle impinged upon the right ventricle. I may mention, that I passed a needle upwards and inwards, in the direction already indicated, into the chest of a fœtus of the seventh month. I found the left ventricle slightly wounded, and the needle had gone through the middle of the right ventricle.

The freedom of acupuncture wounds from dangerous effects, is due, most probably, to the tenuity, sharpness, and polish of the instrument with which they are inflicted. The introduction of the needle is attended with no disturbance to the neighbouring textures, and no access of air can take place. In this respect, they resemble the subcutaneous wounds made by the tenotomy knife.

In the present case, I believe that, if the needle had been extracted immediately after the receipt of the injury, the child, in all probability, would have recovered. I think, in the present case, that there was no pleurisy; if it existed, it must have been very limited, or we should have had some evidence of it. The same may be said with reference to the existence of pneumonia. I think, however, that it is not improbable that the lung was wounded.

That pericarditis was present is pretty evident, if we take into consideration the increased area of præcordial dulness, the fact of the apex not beating distinctly at any point, and the indistinct muffled character of the sound of the heart when the effusion was at its greatest. I shall not proceed to inquire what would be the effect of the motions of the heart on a needle fixed in the parietes of the chest. Supposing the pericardium to have been the site of the injury or puncture, it is not improbable that inflammation of the muscular substance of the heart may have been set up along with the pericarditis.—*Monthly Journ. Med. Sci.* Oct. 1853.

44. *Wound of the Abdomen and Intestines terminating favourably.*—On the 25th of September, 1838, Dr. LUCAS CORONEL Y DIAS was called to see a soldier, 23 years of age, who had been wounded shortly before. On examination, there was found, between the anterior and superior iliac spine of the left side and the umbilicus, a wound, directed from above downwards, and from without inwards, traversing the whole thickness of the abdominal wall, and giving outlet to a loop of intestine, partly covered with omentum, the wound bleeding freely, and partially covered by clots. Cold fomentations having been employed, with a view both of stopping the hemorrhage and of allowing the state of the gut to be seen, it was ascertained that the portion of the intestinal loop which corresponded to the anterior and inferior angle of the wound had been divided in a longitudinal direction for the space of about six lines. Dr. Diaz, having had the patient conveyed to the hospital, determined to practise the intestinal suture, not being willing to expose this patient to the infirmity of an artificial anus. The operation was performed in the following manner: The surgeon, seizing with the thumb and index finger of the left hand, the serous coat of the intestine, succeeded in turning the edges of the wound inwards towards the cavity of the intestine, and in bringing them in contact. Five points of suture were then applied, so that, when the wound healed, the threads might fall into the cavity of the intestine, and not into the peritoneum. The taxis was then carefully applied, and the intestine returned into the abdomen. The edges of the abdominal wound were then brought together by four points of interrupted suture and three slips of adhesive plaster. On the following day, there were symptoms of considerable reaction, pulse hard and full, tongue dry and loaded, some pain and tenderness of the abdomen. The patient was bled to six oz., and eighteen leeches were applied to the abdomen with some relief to the symptoms. On the fifth day after the operation, some puriform matter was passed by the anus. The fever and pain in the abdomen were much diminished. The opium, which had been given up to this time, was ordered to be discontinued. The next morning an emollient injection was given, which produced two stools. The external wound was examined for the first time, and was found covered with healthy pus, and united in all its extent, except at the anterior and inferior angles. On the thirteenth day after the operation, the external wound was almost entirely cicatrized. On the thirtieth day after the operation, the patient left the hospital, and a fortnight afterwards he returned to his regimental duty.

The patient in this case had taken no food for six hours before the time when he was wounded; he had always enjoyed excellent health, and assistance was afforded him very promptly. To these circumstances, Dr. Diaz attributes much of the favourable result.—*Monthly Journ. Med. Sci.* from *Gaceta de Madrid*, Sept. 1853.

45. *Cerebriform Tumours of Kidney mistaken for Ovarian Tumours.*—Dr. GREENHALGH related to the North London Medical Society (Dec. 14, 1853) the case of a young woman, twenty-one years of age, who, after being struck over the region of the left ovary, presented symptoms of ovaritis which yielded to calomel and opium, leeches, &c. Some time after recovery from the acute symptoms, a swelling about the size of an orange was detected in the iliac fossa, which continued to increase, and appeared, by its pressure, to interfere increasingly with the development of three children born during the ensuing seven years. It was pronounced by skilled practitioners to be ovarian, and a fit case for removal. After her last confinement she sank from exhaustion, and the tumour was found to be a kidney, the subject of cerebriform disease, weighing twenty-seven pounds.

46. *Ovariectomy.*—Mr. ERICHSEN communicated to the North London Medical Society (Dec. 14, 1853) an account of a case in which he had recently successfully extracted a large ovarian tumour from a lady 65 years of age. The tumour, which was principally solid, and weighed about sixteen pounds, was removed by the long incision. The patient made an excellent recovery, not having had a bad symptom. Mr. Erichsen stated, that so far as the surgical management

of these cases was concerned, he thought the principal points deserving attention were to proportion the length of the incisions to the magnitude of the tumour, to diminish this in size by tapping, after the abdomen had been opened, and, in ligaturing the pedicle, to take care that the peritoneal investment of this root was dissected off along the line of application of the ligature. In this way the risk of peritonitis was lessened very materially. He also advised that the stump of the pedicle should be well drawn out through the lower part of the line of incision, and fixed there by twisting its ligature round the hare-lip pins, by which he recommended this part of the incision to be closed. Mr. Erichsen then proceeded to discuss the general question as to the propriety of extracting ovarian tumours, and, after pointing out the serious and often rapidly fatal character of this disease, the inutility of medical treatment and the dangers of tapping, expressed his opinion, that the operation was a sound and legitimate one in those cases in which the growth had begun seriously to interfere with the comfort of existence and the healthy action of the abdominal organs, the patient wasting and suffering much discomfort from her size, with difficulty of breathing, repeated vomiting, and gastric irritation. In these cases he saw no chance of giving the patient any effectual relief, except by the ablation of the tumour, which statistics showed could be done with success in nearly two cases out of three. He next proceeded to discuss the difficulties of the operation, which were rather of a medical than of a surgical character, consisting in the diagnosis of the existence of such adhesions as would prevent the removal of the growth, or in the difficulty that occasionally occurred of discriminating between ovarian and other kinds of abdominal tumour that did not admit of extirpation.—*Med. Times and Gaz.*

47. *Cancer from Inoculation.*—Mr. RICHARDSON presented to the Medical Society of London (Jan. 14, 1854) the uterus and vagina, and the heart of a patient, whose case he had formerly laid before the Society, as one probably of cancer by inoculation. The husband died some years ago from cancer of the penis, and had had sexual intercourse with the patient long after the occurrence of the gleet discharge which accompanied the cancer, and, until the act, gave him much pain. The patient remained well until upwards of two years after the death of her husband, when she first complained of weakness, anæmia, and a distressing sense of bearing down. Dr. Snow then saw the case with Mr. Richardson, and, on examination, they found a bleeding fungoid mass, breaking up most readily on the introduction of the finger. She at length sunk from exhaustion, following the loss of blood, and the repetition of three-grain doses of opium. Mr. Richardson then forwarded the sexual organs to Dr. Edward Smith, for microscopic examination, who reported as follows:—

“The case is one of epithelial cancer. The structures at the entrance to the vagina are free from the disease; but, within three-quarters of an inch of that point, the mucous membrane presents a patch of epithelial cancer, and thence the disease extends to the anterior wall and the structures exterior to the mucous membrane of the urethra. There are also three other small points on the vagina which are not affected, viz. immediately above the patch just mentioned, a rounded space about the centre of the vagina surrounded by the projecting cancerous mass; and, lastly, that part which surrounds the projecting os uteri. At all these points the mucous membrane retains its natural epithelium. The cancerous mass, therefore, occupies nearly the whole of the vagina, and is fully nine lines in thickness, at the back part, near to the centre of the canal, where it also projects nearly half an inch into the cavity above the level of the mucous membrane. It also involves all the tissues except in the patch near to the entrance of the vagina, where the mucous membrane is alone affected. The whole of the lip of the os uteri, and, indeed, the canal of the neck, is ulcerated, and the tissues infiltrated with the cancer. The body of the uterus is enlarged and vascular, but no cancerous growth is found on the walls, or on the mucous membrane. A careful examination of the blood in the capillaries beneath the mucous membrane failed to detect any evidence of the disease within the vessels. I am not quite clear that the mucous membrane of the neck of the bladder, or of the urethra, had been attacked with cancer. It

is quite clear that the malignant disease had seized all the subjacent tissue, and that a rent in the mucous membrane occurs at that spot, but I think it probable that the perforation has resulted from *post-mortem* manipulation. The cellular character of the disease is most evident, and the cells of the small size, which is met with in epithelial cancer, developed in resisting tissues. There are also many of the large, well-defined granular cells said to characterize the colloid forms of the disease."

Mr. Richardson inferred that this was a case of cancer communicated by direct contact, either by or to the woman, and had ascertained from country practitioners that many similar instances had been traced. Mr. Paget and Dr. Drutt had also borne corresponding testimony.

Dr. Ogier Ward recommended the application of nitrate of lead in the proportion of gr. v to ℥j of acidulated water, in cases of hemorrhage, with or without offensive discharges.

Mr. Rogers Harrison, in reference to this case, and also to one which had occurred to Professor Quckett, and was related by Dr. E. Smith, considered that we should be chary in admitting the possibility of such a mode of communication.—*Med. Times and Gaz.* Jan 21, 1854.

48. *Upon the Specific Nature of Blennorrhagia.* By M. PIERRE VIGUIER, Surgeon to the Hôtel Dieu, Lyons.—M. Ricord has affirmed that blennorrhagia, uncomplicated with a primary syphilitic sore, is never virulent. He has even denied all specificity as an inflammation. Consequently, he believes that "women frequently communicate blennorrhagia without having it themselves." According to the author, it would be more correct to say: "Women affected with discharge from the organs of generation, such as fluor albus, menstrual discharge, uterine catarrh, &c., can occasionally give to the male urethritis."

Urethritis and blennorrhagia are two inflammations which should not be confounded; they differ in their cause, progress, and nature. M. Thiry has arranged blennorrhagia under four heads: 1, simple blennorrhagia; 2, virulent blennorrhagia; 3, blennorrhagia produced by a chancre; 4, a specific blennorrhagia, which he does not define.

M. Viguier calls simple inflammation of the canal urethritis. This can be excited by drink, excess of connection, mechanical irritation. Blennorrhagia he calls a specific inflammation, dependent upon the contact of pus, possessing specific properties, but differing from the pus of syphilis. This form consequently differs from blennorrhagia virulenta, or that arising from the presence of a syphilitic urethral chancre.

Urethritis is attended by purulent secretion, ardor urinæ, and œdema of the prepuce; but, in the course of a few days, the active stage being passed, it shows a natural tendency to resolution. Its extinction is complete, and it leaves no trace of its presence in the canal. There is no necessity for catheters, copious, &c. Great drinkers of beer are stated to afford most instances of this affection, and the disease rapidly disappears by purging and abstinence from the exciting fluid. There is no chronic stage. When Swediaur wished to prove, by injections of ammonia into his own urethra, that he could produce blennorrhagia at will, he failed, for the only affection resulting was urethritis.

After coitus with an infected female, four, six, or eight days generally elapse before the appearance of the discharge of blennorrhagia. There is first unpleasant pruritus; then some obstacle to the flow of urine; lastly, discharge. These last, namely, the obstacle to the flow of urine and the discharge, increase to the tenth day, when they have reached their summum of intensity; the pus is then yellow, or yellowish-green, abundant, and tinged with blood. Erection is painful, and disturbs the sleep; the canal is hard, and affected by inflammation through its entire thickness; there is weight in the perineum, and often propagation of the inflammation to the bladder, to the vas deferens, and to the epididymis. To this acute stage succeeds a second, called by the author "curative," which alone must be selected for the administration of anti-blennorrhagic medicines, if it be desired to gain from them all the good effects of which they are capable. When administered at an earlier period, their action ceases with the diminution, but by no means with the disappearance of the

acuter symptoms. There is not in blennorrhagia a tendency to spontaneous cure as in urethritis; the discharge may become permanent, losing, however, its yellow colour, and becoming almost limpid; excess in drinking or coitus causes its rapid reappearance.

Blennorrhagia is always produced by contagion; blennorrhagic pus must be deposited upon the mucous membrane of the urethra; but certain conditions are required to favour the development of the disease—the quantity of pus, its prolonged action, irritation of the urethral mucous lining, &c. An individual having frequent acts of connection with a blennorrhagic female would be sure to contract the disease, when another individual more careful would escape.

During the chronic stage of the disease, there is no danger from fresh infection; but the original disease may acquire increase in intensity.

The author concludes by general remarks in opposition to the statement by M. Ricord, that blennorrhagia may be produced by common, and not specific causes.—*Medical Times and Gazette*, Jan. 7, 1854, from *Gazette Hebdom.* Dec. 1853.

49. *Polypus of Epiglottis; Spontaneous Separation.*—The following curious case, occurring in Prof. Syme's surgical ward, is related by Dr. DOME:—

Christina P., æt. 18, admitted September 30, 1852. Patient states that, about ten days before admission, she injured her throat by swallowing a piece of hard crust; after this, she felt some difficulty and pain in deglutition. About a week ago, she experienced a peculiar sensation in the back of the throat, which led her to believe there was some tumour growing there.

On admission, a distinct tumour can be seen and felt, arising near the base, and on the right edge of the epiglottis. The tumour appears to be pediculated, of the size of a small cherry, and the surface is somewhat irregular and marked with yellowish patches of ulceration. To the touch, its consistence seems to be similar to that of a healthy salivary gland.

October 2, 10 A. M. The tumour was to-day very distinctly seen and felt. She complains that it gives her breath an offensive odour, which is very appreciable. A little after mid-day, Mr. Syme examined the throat, and found that the tumour had disappeared, and no doubt had been swallowed.

The point from which the tumour has become detached can be readily seen, and was touched with the sulphate of copper. She was dismissed quite well a day or two afterwards.—*Monthly Journ. Med. Sci.* Oct. 1853.

OPHTHALMOLOGY.

50. *On Change of Sight as Premonitory of Hard Cataract.*—It occasionally happens that persons who were presbyopic, and have used convex glasses, as they advance in years recover natural vision, or even become near-sighted. Mr. W. WHITE COOPER has recently had the opportunity of studying four cases of this description, and has quite satisfied himself that, in them at least, the change from presbyopic to myopic sight was premonitory of hard cataract.

"I have observed," he says, "that myopic persons, who become affected with cataract, increase the power of their glasses to the very highest numbers, even to No. 14. It is often considered that the need of higher and higher glasses, under these circumstances, is a delusion, and that the mere fact of the vision becoming more and more imperfect, leads the patients to seek increased assistance in stronger glasses; yet, as the highest concave glasses diminish objects to almost microscopic minuteness, it was difficult to believe that they really afforded assistance. Observation has, however, led me to believe that the assistance was not imaginary; and the reason is probably this. In all cases of hard lenticular cataract, the crystalline lens becomes closer and denser in structure, and generally rather flattened in shape; but the flattening is in some cases less in proportion than the increase of density. By this increase of density, the