the fifth day after vaccination the patient complained of headache, was feverish, and, in fact, had the usual amount of discomfort that attends a successful revaccination. Mrs. B. was at this time nursing her infant, a child about six months old. The child had not been vaccinated on account of eczema from which it was suffering at that time. On March 1st, as nearly as the mother can remember, an eruption appeared on the head, thorax, and legs of the child, who had been feverish and irritable for two or three days previous. On some portions of the body the eruption was confluent, but on the arms and thighs it presented the characteristic appearance of cow-pox. It was not an instance of accidental inoculation, for there was no possible way by which the child could have introduced the virus at so many different points. The disease must have been contracted from the mother through

the medium of her milk. The child was not very sick, although there was considerable discomfort from the eruption. The drawing gives a remarkably good idea of its appearance. In order to test the matter more thoroughly, Dr. Cutler, of Chelsea, charged a few points with the lymph, and inoculated a cow on the vulva. On March 15th I received a note from him in which he says, "I send you points taken to-day from a perfect vesicle planted upon the vulva of an animal seven days ago. The vesicle has an elevated base, a smooth, regular, perfectly spherical margin, is not yet umbilicated, and has all the characteristics of a pustule resulting from a series of human transmissions. This puts beyond cavil the question of identity in the Roxbury case." The final proof of the accuracy of the diagnosis, the submitting a human being to vaccination with this virus, was not attempted.

RECENT PROGRESS IN SURGERY OF JOINTS AND OF DEFORMITIES.

BY E. H. BRADFORD, M. D.

OPERATIVE TREATMENT OF THE SEVERER FORMS OF CONTRACTURE AND ANCHYLOSIS AT THE HIP-JOINT.

ROSMANIT,¹ whose personal experience in the matter was during his service as assistant at Billroth's klinik, has collected a valuable number of cases of this distortion. The article refers entirely to cases requiring operative intervention, exclusive of those which can be benefited by means of apparatus and extension. He admits that it is almost impossible, if not quite so, to determine accurately the exact nature of a contracted hip-joint, whether bony ankylosis or simply fibrous adhesions are present or not.

In considering this the nature of the previous inflammation, the duration of the contraction, and the age of the patient have to be considered. The therapeutic measures which can be employed are: (1) in the mildest cases simple extension by weight and pulley; (2) *brisement forcé*, with one or more sittings, followed by fixation by weight and pulley and plaster of Paris; (3) tenotomy, myo- and fasciotomy as a prelude to *brisement forcé*. The skin, as Volkmann has shown, is not of much importance in maintaining the contraction of the hip-joint, but the fascia lata is, particularly the intermuscular ligament between the rectus and tensor vaginæ femoris muscles.

Froriep has shown that in the contraction of the hip and knee the muscles are not as powerful in fixing the distortion as the connective tissue. Winiwarter has

¹ Archiv f. klin. Chir., 1882, 28th Bd., 1, i.

recently revived and Billroth performed the open incision of the soft tissues in contractions of this sort. A V-shaped incision is made from Poupart's ligament to the front of the thigh, the size depending upon the amount of contracted tissue. After the division of the skin and fascia attempts should be made to straighten the limb, which sometimes can be done without division of the muscles; this, however, can safely be done, even down to the capsule of the joint.

After the limb has been straightened it should be fixed either by plaster of Paris or by extension, with fixation of the pelvis, the choice depending upon the experience and preference of the surgeon. In cases of bony ankylosis or firm fibrous adhesions correction of the deformity can only be done by manual or instrumental osteoclasis or osteotomy. Manual osteoclasis is apt to cause a fracture, which, however, experience has shown not to be a disaster. The writer seems not to be familiar with the excellent osteoclast devised by C. F. Taylor, of New York, and described in the *New York Medical Record* a few years ago, and he rejects instrumental osteoclasis as of little practical use.

Osteotomy of the neck of the femur is an operation with a mortality of fifty per cent., according to Volkmann's experience. In the practice of others the mortality has been much less, — 11.43 per cent. In subtrochanteric osteotomy the mortality was 8.82 per cent., and in twenty-eight cases of wedge-shape excision of bone 7.14 per cent. Resection of the hip-joint has been advised and performed in the hopes of gaining a better result than after osteotomy. Out of thirty cases six deaths were recorded, a mortality of thirty per cent.

ANTISEPTIC RESECTION OF THE KNEE.

In France the operation of excision of the knee has never been popular. The writer (Boeckel¹), however, reports his experience with thirteen cases done under strict antiseptic precautions. Primary union he considers the rule in this operation, and consolidation took place within fifty days. Of the thirteen two died of affections overlooked before operation, — endocarditis and pleural effusion; in a third subsequent amputation was necessary. The writer did not find that the antiseptic dressing delayed repair. The H incision is preferred. The patella and the quadriceps extensor synovial sac are removed, and great care should be taken that the sawn ends fit accurately. All diseased parts should be thoroughly scraped away, and after the operation the limb should be elevated. Suture of the bones the author does not advise, but thorough drainage is necessary, not only on the sides of the incision, but also vertically in the centre, reaching down to the vessels; the drainage tubes should, however, be removed early, all being out by the third dressing. Lister dressing and a fixed appliance are essential. The writer advises an early operation.

RESECTION OF THE KNEE.

Hahn² has exhibited three patients on whom he performed resection for purulent inflammation of the knee, where primary union took place, and bony ankylosis in four weeks in two, and in a third eight weeks.

He considers removal of the synovial membrane, when diseased, important.

In partial resection motion may be hoped for in an ideal result, but this is not to be expected in complete

excision. The reporter has performed the operation twenty-three times since February, 1881. Of these, three died: one of diphtheria, one of septicæmia through imperfect antiseptics, in the opinion of the writer, and one of general tuberculosis. Of the remaining, in sixteen primary intention followed, and in four primary intention did not take place, but recovery apparently did; in two the result was not determined, as the operation had been recently performed. The method of operation was as follows: An Esmarch bandage was applied, and an incision made direct down to the bone, using an ordinary amputating knife, the incision being through the quadriceps extensor tendon just above the patella, and reaching from side to side. The knee is then strongly flexed, and the synovial membrane dissected out; the rest of the operation is done in the ordinary way.

The advantages of this incision over the anterior flap method or the H incision are as follows: There is greater probability of primary union and also better drainage; the patella is never pulled above the knee after cure. The bones should be fastened together, for which purpose a steel pin three millimetres thick and ten centimetres long is fastened to a trocar handle and driven through the skin and bone by a hammer; three pins are usually enough. The pins should be removed at the end of three weeks. The age of the patients was from five to fifty-five. In the majority of cases of the children it was only necessary to remove the bone above and below the lines of the epiphyses.

RESECTION OF THE KNEE AND RESECTION OF THE ASTRAGALUS.

Kraske³ showed a successful case operated on four years before. The wound united by first intention, and the patella, which was sawn through, is united by bony union. The patella appeared to be movable, and not united to the ankylosed bones. He also reported three cases of resection of the astragalus, with the result of a normally useful foot in all cases.

HEREDITARY CONGENITAL LUXATION OF THE ANKLE

Kraske⁴ exhibited a patient with this unusual deformity. The femur was smaller than normal and the tibiæ deformed, especially at the lower end. The feet had the appearance in general of exaggerated flat feet. The patient's son inherited the same deformity, and when thirteen years old was operated on by resection of both ankles. At the operation it was found that a luxation was actually present. Recovery followed, with an improvement in position of the feet.

A second child of the same parents suffered from the same deformity, but died when thirteen months old; the specimen was preserved, demonstrating the lesion.

ANTISEPTIC RESECTION OF THE HIP.

Boeckel⁵ advises resection in suppurative hip disease in cases where the patient is failing, and in the non-suppurative cases where crepitation is marked. If the external surroundings of the patient are good in suppurative cases he advises incision, emptying of the pus, and drainage. The indication is the same in acute osteo-myelitis and osteitis juxta epiphysaria. He favors subtrochanteric incision, and removal, as far as possible, of the fungous synovial membrane and clearing

¹ Bull. et Mem. de la Soc. de Chir. de Paris, t. vii., p. 571.

² Congress of German Surgeons.

³ Congress of German Surgeons.

⁴ Congress of German Surgeons.

⁵ Gaz. med. de Strasbourg, 1882, No. 1.

the acetabulum. The external incision is not sewed. Extension is to be applied for several weeks. At the end of four to six weeks the patient is allowed to get up, extension being applied at night, crutches and a raised shoe on the well foot being used in the daytime. In from three to four months the limb can be used. The author reports a small number of cases, but with good result.

STATISTICS OF RESECTION OF THE HIP-JOINT UNDER ANTISEPTIC PRECAUTIONS.

Grosch¹ has collected one hundred and sixty-six cases of this operation, done under strict antiseptic precautions. In presenting the cases he has grouped them under heads corresponding to the condition of the joint at the time of the operation. The first stage he classifies as that where the pathological change is slight, and where the suppuration, slight in amount, has not worked to the outside. In the second stage fall those cases with extensive suppuration and established fistulae. The third class comprises those patients who have become much reduced by prolonged and extensive disease. Out of one hundred and twenty cases watched to the end, forty-four died, a mortality of 36.7 per cent., a percentage which corresponds with that of Guy's Hospital, Volkmann's klinik, or the Copenhagen clinique, and is lower than Culbertson's tables taken from cases not all treated antiseptically, and is much lower than Leisrink's mortality before the introduction of the antiseptic method, 64 per cent. Furthermore, dividing the cases into two groups, those occurring between 1870 and 1875, during the apprenticeship of the antiseptic technique, the percentage of mortality was 9 per cent. higher than since that time. The mortality in the first stage of the disease among children was 0 per cent., in the second stage 24.1 per cent., and in the third 67.5 per cent. Antiseptic dressings do not seem to have effected any change as to the usefulness of the cured limb as compared to that before the method was introduced. This is a matter which is not yet definitely settled, but a number of cases were established where an almost normal usefulness of the limb had remained unimpaired many years after the operation.

Where, during the operation, perforation of the acetabulum occurred, the percentage of mortality increased twenty per cent.

The writer farther found that the duration needed for recovery was not influenced by the antiseptic method of dressing, but it gave a greater immunity against wound complications.

CONSERVATIVE TREATMENT OF SEVERE HIP-JOINT DISEASE.

In contrast to the above the excellent paper of Dr. Judson² is of value. The patients were all unfavorable as regards prognosis, but excellent results, much better than could have been obtained by excision, were gained by a careful treatment, after from two to three years' treatment. The treatment was according to the mechanical plan. Dr. Judson justly says, "As hip disease derives its desperate character (its quasi malignity) from the difficulty experienced in securing rest, and not from the nature of the disease, which is sufficiently amenable to treatment when occurring in other parts of the body, it follows that the rate of mortality is

¹ Centralblatt f. Chir., No. 14, 1882, p. 229.

² History of Three Cases of Hip Disease in the Third Stage. New York.

diminished by providing efficient rest, and avoiding the risks of operation."

RICKETY DEFORMITY OF THE NECK OF THE FEMUR.

Fiorani³ has observed in fifteen cases a deformity which caused a limp in gait, suggesting hip disease. Motion, however, at the hip-joint was perfect. The head of the femur was in place in the acetabulum, as is not the case in congenital dislocation, but the trochanter was thickened, and nearer the crest of the ilium than normal. This the writer explains as a rickety curvature of the neck of the femur on the supposition that instead of the usual obliquity of the neck downwards from head to shaft, a reverse obliquity exists upwards from head to shaft. The shortening in some of these cases was quite marked. No autopsies demonstrated this hitherto undescribed deformity.

CONTRACTION OF TOES.⁴

Beside the distortion known as hallux valgus, dorsal and plantar contractions are not unfrequently to be met.

Dorsal contraction may follow cicatrices from loss of substance, and frequently the small toe will be found extended at the metatarso-phalangeal articulation, and lying obliquely upon the other toes. The writer is of the opinion that this may in certain cases result from other causes than the pressure of shoes; sometimes this follows a contraction of the tendon secondary to inflammation of the metatarso-phalangeal joint. In one of these cases Nicaladoni divided all the extensor tendons, and fixed the toes in an exaggerated flexed position for several weeks. The patient was then furnished a shoe with an inner sole reaching only to the head of the metatarsal bones, and an upper pressing the toes downwards.

Plantar contraction is less common. One case is reported following a wound in the ball of the great toe. Cure followed division of the tendon of the flexor longus pollicis and proper fixing apparatus. A flexed contraction of the second toe alone is not so very uncommon, usually from narrow shoes, as has been described by Paget and Hueter. Cases of congenital distortion of this sort have also been described.

MECHANICS OF STANDING.

Beely,⁵ in opposition to the usual opinion, believes, basing his opinion on plaster casts taken from the sole of the foot when standing, that the points of the foot which bear the weight in a standing position are, when both feet are in use, the heads of the second and third metatarsal bones and the os calcis. When one foot alone is used to stand upon, the tuberosity of the fifth metatarsal shares with the other bones, as above mentioned, the weight of the body.

RESECTION OF HALF OF A VERTEBRAL BODY.

Israel⁶ in opening an abscess in the lumbar region of a patient thirty-four years old with scoliosis persisting since boyhood, and suddenly accompanied by paralysis, found extensive disease of the bone. He resected a diseased portion of the twelfth rib, and scraped out the carious portion of the diseased vertebral body, penetrating into the vertebral canal, from which a quantity of pus discharged. The patient did well for five

³ Centralblatt f. Chir., No. 16, p. 264, 1882.

⁴ Nicaladoni, Centralblatt f. Chir., 1882, No. 16, p. 266.

⁵ Arch. f. klin. Chir., 1882, Bd. xxvii., Heft 2.

⁶ Berliner klin. Woch., 1882, No. 10.

weeks, when an empyema resulted and death followed. The operative interference had no effect upon the paralysis.

OLD FRACTURES OF THE VERTEBRÆ.

Küster¹ reported at the last Congress of German Surgeons two cases of complete and permanent recovery from fracture of the spine mentioned by him a year before. In one paralysis of all the extremities had been present.

REDUCTION OF A DISLOCATION OF THE THIRD CERVICAL VERTEBRA FOUR MONTHS OLD.²

The patient was fifteen years old, and the distortion followed an accident in the gymnasium. The symptoms, which had remained thirteen weeks after the accident, were a slight paresis of the bladder, lameness in the left leg, and loss of power in the left arm and forearm. A prominence of the spinous process of the third cervical vertebra existed, the head was held sideways, and a depression could be felt in the pharynx, and there was difficulty in swallowing. Four months after the accident the patient was etherized, and the head twisted and pulled straight. The deformity recurred in a few weeks, and was again corrected, the reduction taking place the second time with a snap. All symptoms disappeared immediately, and the patient remained well.

SYPHILITIC AFFECTIONS OF THE JOINTS.

Schüller³ classifies these affections as, first, those following acquired syphilis. (a.) Acute, with serous effusion accompanying an eruption of the skin. (b.) Acute, subacute, or chronic, with serous effusion accompanying the later stages of tertiary, characterized by a papillary growth on the synovial membrane, and sometimes by ulcerations and cicatrices of the cartilage. (c.) Arthritis secondary to gummata of the joints. (d.) Arthritis secondary to or accompanying periostitis, ostitis, or osteomyelitis.

Second. [In hereditary syphilis. (a.) Subacute serous inflammation of the joint with swelling of the capsule without change in the bone, but with some change in cartilage. (b.) Arthritis following gummata. (c.) Arthritis following periostitis, ostitis, etc. (d.) Arthritis secondary to syphilitic inflammation of the epiphysis. A specimen was shown taken from a woman forty-nine years old, with characteristic syphilitic lesions. A small quantity of cloudy, reddish fluid was found in the knee-joint, and papillary growths on the synovial membrane. Oval superficial ulcerations were found in the cartilages, some of them cicatrized.

TOTAL EXTIRPATION OF THE SINGLE BONES OF THE FOOT.

Dumont⁴ has collected twenty-one cases, namely: nine excisions of the astragalus, four calcaneum, two navicular bone, two cuboid, one cuneiform, one metatarsus. In none of these was a secondary amputation needed.

Fourteen of these were for inflammatory disease, and of these, one died seven years after the operation of some accidental disease, the foot being perfectly

useful, two others died of phthisis within a year of the operation. The other eleven recovered with useful feet. The cases were watched for one to five years after the operation.

TREATMENT OF GENU VALGUM.

Schede⁵ reported the result of an extended experience at the Congress of German Surgeons, as follows: In place of the tedious treatment of the deformity in young children by apparatus, osteoclasis should be used. The objections to the old method are, first, that correction can only be made by stretching the ligaments on the outer side of the joint, and that before recovery takes place the shortened condyle must grow to a normal length, otherwise a relapse will occur. In rickety children the process of growth of bone is frequently delayed, and therefore a long amount of time is needed before cure. In pauper practice it is difficult to command the patience on the part of the relatives necessary to complete a cure.

Treatment according to Hueter's method of permanent flexion of the affected limb is also uncertain and tedious. In children even between five and six years of age it is possible by the power of the hand to break the femur or the tibia at the point where osteotomy is indicated. An assistant should hold the central portion of the bone to be broken, the operator the peripheral, keeping the hand close to the part where fracture is desirable. Care should be used not to rupture the outer ligaments, and therefore the force should be applied gradually. In fracturing the femur the whole leg should not be used as a lever. Schüller has not found that there is a lack of precision in the site of the fracture. Cure is always easily obtained. A plaster of Paris bandage is applied immediately, and usually in eight days the children are allowed to begin to move about with the gypsum bandage applied. In from four to six weeks the consolidation is complete, and the cure is finished unless before the operation there had been a marked relaxation of the ligaments of the knee. In that case apparatus should be applied and worn.

Schede has operated in all twelve times in double genu valgum, of which two required additional fracture of the tibiae. Single operations were also done so that in all thirty-three osteoclasis of the femur were performed, and thirteen of the tibia. No complication interrupted perfect recovery in these cases. In older children Schede advises avoiding osteotomy if possible, but he has had excellent results following MacEwen's operation in eleven cases.

Little,⁶ whose experience has been mainly in the mechanical treatment of the deformity, suspects that violent measures are sometimes attempted unnecessarily. His practice with the thorough use of apparatus leads him to be confident that a majority of such deformities can be cured without operative interference. When appliances fail he prefers MacEwen's operation. His preference, however, seems based on theoretical grounds rather than personal experience. He subdivides the deformity into several different classes according to the ætiology, regarding the rickety as much the less common, and uses the term atonic to cover a class of cases where rachitis is not well marked.

MacEwen⁷ states that he has never operated for the

¹ Centralblatt f. Chir., 1882. 29, 39.

² Gray. Annals of Anat. and Surgery, 1882. Vol. v., No. 2.

³ Congress of German Surgeons v. Centralblatt, f. Chir., 1882, p. 32.

⁴ Deutsche Lertsche. f. Chir., 1882, 17th Bd. 1 and 2, p. 1.

⁵ Centralblatt f. Chir. 1882. 2, p. 878.

⁶ In Knee. London, Longmans, Green & Co.

⁷ Trans. Internal Congress, 1882, vol. iv., p. 190.

relief of genu valgum on a patient under eight years of age, and has refused to operate on older patients who bore traces of acute or recent attack of rickets, and whose bones were still soft. In children as young as two or three years the operation is to be deprecated, partly because the deformity frequently disappears in the growth of the child and partly because it may recur after that age even if thoroughly corrected. He has found that the femora grow after osteotomy as if no operation had been performed. Up to April, 1881, he had performed eleven hundred and forty-nine osteotomies, with three deaths from accidental causes (pneumonia, diphtheria, tubercular meningitis).

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Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.

SECTION FOR CLINICAL MEDICINE AND PATHOLOGY.

ALBERT N. BLODGETT, M. D., SECRETARY.

MAY 27, 1882. Meeting called to order by Dr. GEO. B. SHATTUCK, chairman.

The announcement was made that, owing to circumstances beyond his control, Dr. A. B. Heath would not be able to present the paper he had prepared upon The Work at Quarantine.

MR. ERNEST W. BOWDITCH read a very interesting paper entitled

THE SANITARY ASPECT OF NAHANT, MASS.¹

DR. H. I. BOWDITCH asked the source of contamination of the meadow, and the cause of sickness among the men employed in draining it.

MR. BOWDITCH replied that the meadow contained a large amount of half decomposed vegetable matter, and in addition to this, much sewage collected there. The men were not affected until the upper end of the meadow had been reached, when the entire force of employees was made sick by the emanations from the soil. The meadow is then a natural catch-basin of a large area of the typhoid district, and much sewage has

¹ Medical and Surgical Journal, vol. cvii., p. 97.