The spring meeting of the British Orthopaedic Association was held in Glasgow in conjunction with the Dutch Orthopaedic Society and the Hand Clubs of Great Britain from April 7 to 9, 1960. The president, Mr H. J. Seddon, was in the chair.

Symposium on Hand Surgery

General review—Mr R. G. Pulvertaft (Derby) gave a brief outline of the history of hand surgery. He recalled that as long ago as 1858 Huguier had performed a phalangisation of a defective thumb to improve its function. In 1910 Lange of Munich reported several hundred tendon transplants, the tendons being lengthened by paraffin-impregnated silk. In 1918 Bunnell first reported a method he had used for repairing tendons of the finger, and until his death in 1957 he worked unceasingly upon the many aspects of hand surgery. It was the work, the instruction and the inspiration of Bunnell, Koch, Mayer and Iselin that had raised in our time a corpus of trained hand surgeons throughout the world. In 1946 the American Society for Surgery of the Hand had been founded. The Hand Club of Great Britain was founded in 1952 and the Second Hand Club in 1956, and Hand Societies now exist in Scandinavia, Brazil and Japan.

Hand surgery was not the prerogative of any one specialty but was shared by general, orthopaedic and plastic surgeons. But while each must be ready to ask the advice of the other, the complete hand surgeon must be able to undertake all the duties of this work. Nerve suture had always played an important part in hand surgery, but more recently the challenge of irreparable nerve damage had stimulated the development of neurovascular island flaps by Moberg and operations for intrinsic muscle palsy by Brand and many others. Accidents were responsible for the majority of patients seen at the hand clinic, but the organisation of the early treatment of the injuries which was so essential left much to be desired, and he thought it important that all accident services should have a hand unit.

Replacement of lost skin—Mr I. A. McGregor (Glasgow) described the different methods of skin grafting in the hand. He divided the grafts into free grafts and flaps. Free grafts could be whole-thickness or split. Each had its advantages and disadvantages. The thinner the graft the more likely it was to take, but a thin graft tended to develop a contracture so that it often needed to be replaced later. In traumatic lesions early skin cover was essential to reduce fibrosis to a minimum. The graft must be applied to a suitable bed free from dead tissue and capable of capillary formation: bone, cartilage and tendon were unsuitable. The free graft should overlap the defect and be fixed in position with sutures, the excess graft being removed at the first dressing. A bed unsuitable for a free graft was filled by a flap. A large defect might require an abdominal flap, intermediate defects a cross-forearm flap, and a smaller defect a cross-finger or thenar flap. Mr J. Charnley (Manchester) wondered if it were necessary to graft “guillotine” amputations of the finger tip in view of the fact that the graft might remain insensitive. Mr H. Richards (Cardiff) said that the cross-forearm flap presented certain social problems. Mr McGregor, replying, said that many patients of low intelligence did not wish to have the finger tips grafted because they did not mind the disfigurement. He agreed that there was some loss of sensation after grafting. He thought the cross-forearm flap was so good that it was worth the temporary difficulties involved.

The use of intravenous dye technique in the assessment of tissue viability—Mr M. N. Tempest (Chepstow) said that the early differentiation between dead and living tissues in fresh soft-tissue injury was most important. Viability could be determined by the intravenous injection of either Disulphine blue or Kiton-fast green, which stained all living soft tissue whereas avascular tissues remained unchanged. Two hundred and thirty observations had been made. Maximum staining was reached in three to five minutes and the dye was excreted by the kidney in about forty-eight hours. Three factors affected the viability of the tissues: thermal, crushing and tension. He illustrated examples of these. Mr G. Bonney (London) wondered whether such early differentiation of avascular tissue would not result in tissue being excised which, given time, might have recovered. Mr Tempest replied that this might apply to some tissues rendered temporarily avascular by tension. He added that a free graft of dyed skin lost its colour twelve to eighteen hours after application.

646
The place of open operation in the treatment of fractures of the hand—Mr C. C. Jeffery (Exeter) said that open reduction and fixation of fractures of the hand was not often necessary but was of great value in certain cases: 1) displaced transverse and comminuted fractures in which closed methods had failed; 2) when external fixation would not maintain the position; 3) displaced or angulated fractures arriving late for treatment; 4) if vascular embarrassment rendered external splintage inadvisable; and 5) when there was loss of bone. Kirschner wires provided a good form of internal fixation and a dental drill was useful in inserting them. The wire should not traverse a joint which was intended to function again. Certain oblique fractures, including those into interphalangeal joints, were fixed with transfixion pins. Bone loss could be made good with cancellous bone from the ilium. Mr H. G. Stack (London) illustrated a method of controlling oblique fractures into interphalangeal joints by wiring.

The primary treatment of tendon injuries—Mr H. Bolton (Stockport) said that primary repair of tendons had gained an unjustifiably bad reputation because it was often done by inexperienced surgeons in unsatisfactory accommodation with inadequate instruments. Clean, incised wounds were the only ones suitable for primary suture. Wounds resulting from crushing or those which were contaminated were never suitable. Unless the operation could be carried out within six to eight hours of the injury under suitable conditions it was better to close the wound and to do a delayed repair of the tendon. He emphasised the importance of operative technique and after-care. Certain tendons were treated in different ways. The extensors at the wrist and dorsum of the hand needed only simple approximation by a mattress suture; the extensor tendons to the middle and ring fingers did not retract and splintage alone might suffice. Division of the middle slip of the extensor tendon resulted in the “boutonnière” deformity, which could be prevented by early repair. In the case of the flexor tendons, when the sublimis and profundus were both divided it was often wise to excise the sublimis and repair the profundus only. Dr C. E. Verdan (Lausanne) advised primary suture when possible. Sublimis should be excised. Profundus must be accurately sutured and protected by parallel pins passed through the tendon fastened together outside the skin. He excised the tendon sheath at the site of the suture. If adhesions developed a tenolysis was done later.

The sublimis tendon replacement technique in tendon injuries—Mr G. Osborne (Liverpool) said that the failure of reliable results from the standard Bunnell repair of the profundus tendon was due to insufficient excursion of the tendon and an intrinsic deficiency of the profundus to restore the normal rhythm of movement. Normally the proximal joint flexed to 45 degrees before the distal joint flexed 30 degrees, and to 90 degrees before the distal joint bent 45 degrees.

Co-ordination of sublimis, extensor and profundus tendons was necessary for normal flexion, which was absent after pure profundus grafts. He suggested that this might be overcome by repair of the sublimis and arthrodesis of the terminal joint. The results so far had been encouraging. Mr Lipmann Kessel (London) described an operation for flexor tendon repair in which the sublimis was laced into the profundus in the palm. At a later date it was divided in the wrist and could be extended into the finger as a living graft.

The value of nerve repair—Mr Donal Brooks (London) said that he proposed to consider motor and sensory recovery following repair of median and ulnar nerves lesions at the wrist. Motor recovery must take precedence over sensibility; so tendons and bones must be repaired first, though clearly the sooner nerves were repaired, if they alone were damaged, the better. After repair of distal lesions of the ulnar nerve good motor recovery occurred in four out of five, and of the median nerve in two out of three. On the sensory side four out of five repairs of both nerves gave useful recovery and two out of three reached the grade in which there was no over-reaction. When one digital nerve was divided overlap from the other would take care of the anaesthetic area, but when both were divided they must be repaired. He said that the right time to do nerve repair was when local conditions were most favourable, and there was no logical reason for primary repair. Normal sensibility could never be restored after nerve repair; so the first consideration must be the recovery of protective sensibility. If there were more recovery, so much the better; but the value of the recovery of sensibility depended on the use the patient made of it. A film was shown illustrating this point.

The neurovascular island flap—Dr R. Tubiana (Paris) emphasised the importance of tactile gnosis. Experience had shown that prehension was only really useful in the presence of cutaneous sensibility. When it was not possible to repair the nerves other methods must be considered, and he advised the use of a “hetero-digital cutaneous transplant” with its neurovascular pedicle. Sensibility did not have the same importance on all fingers. On the palmar aspect of the thumb, on the lateral aspects of the fingers opposing it and on the medial aspect of the little finger it was essential, whereas on the medial aspect of the middle and ring fingers it was of less value and these could be used as donor sites. This half of the pulp with its neurovascular supply could be transplanted to a more useful site.
The operation had been carried out on ten patients. The speed at which re-orientation of sensation to its new site took place depended on the patient’s psychological condition. Sensibility spread from the graft into the surrounding skin. Function was only really good when this adaptation was well advanced. The nutrition of the finger as a whole was improved. Causalgia which had been present in two patients persisted after the graft and the graft became painful. The method could be usefully employed in median or ulnar nerve paralysis or in reconstruction of the thumb.

Rehabilitation—Squadron Leader C. B. Wynn Parry (Royal Air Force) said that the main tasks in rehabilitation of the hand were the restoration of joint movement, the prevention and correction of deformity and the recovery of muscle power. But the outstanding problem was the co-ordination of power and range of movement for function. Though tissues with comparatively minor injuries would get better simply with normal active use, the more severe injuries with extensive fibrosis, or with nerve and multiple tendon injuries, would need intensive rehabilitation. There were two basic pillars of rehabilitation—active exercises and passive prevention and correction of deformity. Active exercises comprised both special re-education of muscles by a physiotherapist and purposeful movements such as in games and occupational therapy. Passive movements were helpful during the stage of paralysis in nerve lesions to prevent adhesions and contractures, but the movement must never amount to a manipulation. Oil massage, and stretching followed by splintage, were helpful in overcoming contractures. Lively splints were useful in preventing deformities from muscle imbalance. It was most important that the whole programme should be varied to maintain the patient’s interest. He stressed the economic and humanitarian aspects of this work. It was not only the quicker return to work but the return to skilled work which was so important. He concluded that an adequately planned rehabilitation service provided the surgeon’s efforts with their just reward.

Simplicity of approach in the treatment of hand injuries—Mr P. S. London (Birmingham) said that such great advances had been made in the reconstruction of the mutilated hand that it was too often assumed that these extensive procedures were always necessary. It should be remembered that there were many failures, but these were not usually recorded. He advocated a simple approach to these problems. The minimum requirements of a useful hand were normal or near-normal sensibility and two digits that could be brought together firmly and separated. Tactile gnosia as defined by Moberg was not to be expected in any graft which had been separated from its normal nerve supply, though many would attain protective sensibility. The initial operation was all-important. Often all that was necessary was wound toilet with preservation of as much normally sensitive skin as possible. Small remnants of digits with normal skin should be preserved, but digits which had been denuded were usually better amputated. The object of treatment should always be the earliest possible return to function of a hand unencumbered by stiff or insensitive fingers. If this simple approach were followed many hands would be ready for use after only one operation, and within a few weeks. This had great psychological advantages.

Reconstruction of the mutilated hand—Mr D. A. C. Reid (Sheffield) defined the mutilated hand as one having, through injury, suffered much loss of substance and either totally or partially lacking prehension. The aim of treatment was to provide an effective pinch mechanism. The pincer would consist of one arm on the radial side and the other on the ulnar side. The main requirements of successful reconstruction were good skin cover, provision of motion for the pincer and skin sensibility. There were many possible means of obtaining these ends, and each case necessitated careful planning. The use of Kirschner wires to obtain stability of fractures around which reconstruction could proceed was invaluable.

Late functional and economic results of major hand injuries—Mr I. F. K. Muir (Northwood) described two types of function—as assessed by the surgeon and as assessed by the patient. The surgeon could assess anatomical function at an early stage but final usefulness could not be estimated until any claim for compensation had been settled and the patient was secure in his definitive job. Twenty patients in this last category were reviewed. In ten opposition was intact and in ten there had been severe injury to thumb and fingers and complete loss of opposition. In group I only one patient had changed his work and in all only two suffered loss of earnings. In group II only one had changed his work because of his injury and this had involved him in loss of earnings in excess of his industrial injuries benefit. In all, four patients had some loss of earnings. Compensation varied between £2,000 and £4,000 and the amount did not seem to be proportional to the severity of the injury. Professor J. J. P. James (Edinburgh) said that most patients were at first seen by casualty officers, however much we would like it to be otherwise. These should be taught the essentials of treatment: wound excision, haemostasis, skin cover, bandaging with compression in a good position, and elevation. If this were done the hand would be in good condition for subsequent reconstruction if necessary. Mr Muir, replying, disagreed. He thought that patients with severe injuries of the hand should be
transferred to special centres where expert treatment was available. In modern times distance was no bar to this. Immediate reconstruction was advisable and initial skin dressings should be given up. Mr R. G. Pulvertaft (Derby) said that Mr Muir's ideal should be our aim but was not yet practical everywhere. Mr J. C. Scott (Oxford) said that 90 per cent of hand injuries were only minor. He thought that every accident service should be able to deal with hand injuries. Major injuries should not be left in the care of a house surgeon. He opposed the setting up of special hand centres.

The symposium was summed up by Mr Norman Capener (Exeter). He said that hand surgery had come to occupy an important position. A great deal of its present importance was due to the pioneers in this work. They had not all been orthopaedic surgeons and there were many plastic surgeons to be found amongst them. He said that the anatomy of the hand had gained adaptability by the development of functional sensibility. He stressed the importance of good sensation in any hand with useful function. He supported the idea of simplicity in treatment and said that unnecessary details should be eliminated. Good early treatment was essential, and the mutilated hand was as much of an acute emergency as anything in general surgery. This phase of treatment must always be under the immediate supervision of a responsible surgeon. He was a little anxious about the way in which the sublimis tendon was often excised to allow freer action of the profundus. He thought it had an important action which should be preserved if possible. He emphasised the importance of intensive rehabilitation, and said that the best type of occupational therapy was that which was most similar to the patient's real work.

**Invitation Lecture**

A new approach to diagnosis and treatment—Professor E. J. Wayne (Glasgow) recalled that when he was a student orthopaedic surgeons were concerned mainly with the after-effects of rickets and with chronic bacterial infections of bones and joints. Fractures were still the perquisite of the general surgeon. Although these mechanical problems remained, the orthopaedic surgeon of to-day was increasingly confronted with the end results of faulty metabolism and the consequences of the ageing process. At first he dealt with the problem of what we meant by "diagnosis and disease" and later with how we could decide whether treatment was effective or not. He first discussed the problem of auto-immunisation and illustrated the concept by reference to the thyroid gland. He quoted Hashimoto's disease of the thyroid, in which condition the patient, usually a middle-aged woman, had become sensitive to her own thyroglobulin with the development of auto-immune antibodies in the blood. This reaction resulted in progressive destruction of the gland. At first it became enlarged and later shrunken and fibrotic. At one time it was thought that the condition was very rare, but recently it had been shown that many myxoedematous patients with shrunken thyroids had auto-immune antibodies which suggested that these were examples of Hashimoto's disease seen in a later phase. Many such patients made no complaint during the early stage and only sought advice when the myxoedema developed. This raised the point as to when a disease actually developed. Disease involved the concept of dis-ease, and literally should only be applied to a person who was handicapped by some symptom. A distinction must be made between the person who had an abnormality and one who suffered from disease. He also mentioned the possibility of auto-immunisation being the cause of other diseases including acquired haemolytic anaemia, the so-called collagen diseases, disseminated lupus erythematosus and rheumatoid arthritis, and other diseases which had the common factor that they responded to steroid therapy.

He described histological and radiological studies which had been made in osteoporosis, and mentioned a method of scoring which would indicate the degree of porosis. Patients with fractures of the femoral neck had a low score. It could be said that the abnormality of osteoporosis had led to the disease of fracture of the femoral neck. There were other latent conditions to be found. It was said that for every one patient with diabetes mellitus there was one latent undetected case. He did not know if they would ever develop symptoms. Should they be sought out and treated? The National Health Service would have great difficulty in dealing with an additional 250,000 diabetic patients—but would they really be patients?

Turning to the assessment of the value of treatment, Professor Wayne emphasised the importance of studying control patients before the results obtained from any form of therapy were accepted. One way of estimating these results was by the "double blind." One group of patients was given the drug to be tested and the other was given dummy tablets indistinguishable from the former. Such a test using a vascular relaxant to relieve intermittent claudication showed that it was no better than saline. In such "double blind" experiments it was remarkable how many patients were improved by the inert substance given. He estimated this at 35 to 50 per cent. Were the results of medical treatment any better than this? If they were not, where was our theory and where was our diagnosis?
Other Papers

Avascular necrosis and the head of the femur—Mr J. Patrick (Glasgow) said that any bone which was deprived of its blood supply would undergo avascular necrosis. The changes involved were different in cortical and cancellous bone. In the case of fracture of the neck of the femur it was cancellous bone which was involved. Firstly, there was a relative increase in density which was not always due to ischaemia, but even in the presence of ischaemia union would occur. Secondly, there was a great increase in density due to mechanical collapse. Normal fresh cancellous bone would not collapse if hammered, but if it had been kept at body temperature for a year it would readily do so. Thirdly, a pathological fracture occurred in the upper part of the femoral head. Immediately after a subcapital fracture viability of the head was in doubt. He advocated the use of a graft and a nail to improve the vascularity of the head and provide fixation. The graft should never be introduced as far into the head as the nail because if the neck collapsed the graft, which would have united to the trochanter but not to the avascular head, would protrude into the joint. He said that if, when the nail was introduced, blood emerged from the central hole, the head was viable. If blood could reach the bone cells in the femoral head within fifteen days it would survive. For this reason operation should be as early as possible. If avascular necrosis needed treatment he advised in elderly people an Austin Moore prosthesis and in younger patients a trochanter-to-acetabulum arthrodesis. The high incidence (70 per cent) of avascular changes in children as compared with adults (50 per cent), and in old age (10 per cent), must indicate that blood vessels cross the epiphysial line. Mr Norman Capener (Exeter) said that even basal fractures of the neck had caused avascular changes in children and that Mr F. C. Durbin had had one patient in whom avascular necrosis had developed after a subtrochanteric fracture. He thought that laboratory experiments were unreliable in demonstrating the blood supply to the head of the femur. Mr Patrick, replying, emphasised that sound internal fixation was essential to ensure union.

The value of radioactive isotopes in determining the viability of bone—Mr J. Stevens (Glasgow) said that it had been hoped that the use of radioactive isotopes would provide a useful method of diagnosing avascular changes in bone. This would give assistance in determining the best form of primary treatment in fractures of the neck of the femur. Bone took up isotope in two ways: 1) by metabolic incorporation; and 2) by interchange at the surface of apatite crystals, when Ca^{45} was used as the isotope. In the rat an avascular radius took up 80 per cent as much isotope as a living one, all being taken up by ion interchange. In young and growing animals the metabolic incorporation of isotope was much quicker than in adult animals. This factor of ion interchange had, he thought, been overlooked in investigations into the practical use of isotopes and was of such a degree as to render the published results unreliable. Experimentally, the organic isotope C14 proline was more reliable but its use was impracticable clinically. Mr G. P. Arden (Windsor) agreed that the procedure was unreliable and should be abandoned.

Synovial sarcoma—Dr P. J. Moll (Schiedam) said that synovial sarcoma was a rare tumour. Only thirteen had been found in the Netherlands, and in all the literature he had found 209 in which sufficient data were available to be sure of the diagnosis. The average expectation of life from the time of diagnosis was four years. The youngest patient was found to have the tumour at birth and the oldest was eighty-seven years old. The average age was thirty-five years. It was more commonly found in the arm than in the leg. Calcium deposits were commonly seen within the tumour radiographically, and metastases were most commonly found in the lungs.

A total of 159 patients had been followed up. Treatment had been by amputation, local excision, irradiation and combined surgery and irradiation. Twenty-five patients had survived for five years, and fifteen of these were still alive, but only six were free from metastases. This indicated what a highly malignant tumour it was. Amputation did not give the best results. There was much to suggest that local excision combined with radiotherapy was the best line of treatment. Mr A. L. Eyre-Brook (Bristol) agreed that the tumour was highly malignant. Of his series of ten patients, three were alive and well nine, five, and five and a half years later. He believed that amputation was the best treatment.

Treatment of a sarcoma of the femur by radiotherapy followed by excision of the femur and turn-up-plasty of the leg—Dr H. W. Wouters (Utrecht) described the case of a thirty-five-year-old patient who was found to have a reticulum-cell sarcoma in the upper part of the shaft of the right femur which was confirmed by biopsy. After irradiation there was great improvement both clinically and radiologically. Two months after the beginning of treatment the femur was excised completely, the foot was amputated and a turn-up-plasty was carried out with an acrylic hip prosthesis driven into the lateral malleolus. The leg was in plaster for five weeks. The circulation remained excellent but the stump atrophied. It was now end-bearing and was free from phantom symptoms though it took three years for the

THE JOURNAL OF BONE AND JOINT SURGERY
patient to accustom himself to it. He now walked with a stick, sat comfortably, and earned his living breeding cattle. There was active flexion from 30 to 90 degrees but no other movement.

**The stiff back in children**—Mr N. J. Blochey and Mr J. Schorstein (Glasgow) reported twelve children with stiff backs due to causes other than Pott's disease. The causes were: spondylarthritis, three; prolapsed intervertebral disc, one; osteoid osteoma, one; extradural abscess, two; tuberculous spinous process, one; implantation epidermoid, four. They described the findings in the first and the last groups. A child with spondylarthritis presented with a rigid lordotic back. There were attacks of pain with screaming. The white cell count was raised, the sedimentation rate might be 30 to 40 millimetres in the first hour but the temperature was normal. There was no response to penicillin. On exploration the disc was swollen and bulging. When it was incised no pus was found but staphylococcus pyogenes was grown from a swab. This was sensitive to chloromycetin and recovery followed treatment with this drug. Four patients presenting with rigid backs showed myelographic evidence of filling defects in the lumbar region. At exploration these were found to be greyish tumours lying intrathecaly with the nerve roots stretched over them. These could be shelled out and were found to be epidermoid implantations. All four children had had lumbar punctures. At that time lumbar puncture in tiny children was done with an intravenous needle. It had been discovered that these were particularly likely to carry in a core of skin and should obviously not be used in future for this purpose. Mr E. E. Price (Melbourne) said spondylarthritis was becoming common in Australia. It varied from the chronic to the severe. There was a quick onset and quick recovery. He had never had to explore the spine for this condition. Mr P. H. Newman (London) asked if there were any sign of rheumatism in these children. Mr Blochey replied that not all the tumours were implanted. Some were spontaneous but he did not know how many. Acute rheumatic fever could cause a stiff back, but such patients were omitted from this series. Osteoid osteoma presented as a stiff back, but in his patient there had been hyperaesthesia of the lumbar skin.

**Prolapsed intervertebral disc in the adolescent**—Mr A. McDougall and Mr J. M. Robertson (Glasgow) said that root pressure was the commonest cause of backache. When this occurred in children it was often looked upon as a curiosity, but it was in fact more common than was usually supposed.

In a six-year period 946 explorations had been carried out. Fifty-seven were in children between the ages of thirteen and nineteen. It was equally common in boys and girls. Operation was only undertaken when conservative measures had failed. The onset was usually insidious, with stiffness and an ill-defined ache in the buttock or back. Occasionally there was a history of injury. Straight leg raising was restricted. These signs might persist for years and gradually assume the adult type. Only a few settled with conservative treatment but there was prompt improvement after operation. They advocated exploration of both the fourth and the fifth space and had found one lesion between lumbar 3 and 4, twenty-one between 4 and 5, and twenty-nine between L5 and S1; in six both levels had been involved. When the Lasègue sign was simulated under anaesthesia the affected disc bulged and it made no difference which leg was elevated. When the bulging disc was incised sterile fluid under pressure was released. The disc material was soft and white. There was no sequestration. After operation exercises were begun on the third day and the patient was got up on the eighth. It was a noticeable feature of disc protrusion in children that the pressure on the nerve root was less than was the case in the adult. Dr G. F. J. M. Bär (Nijmegen) said that he had seen this condition in twins. Mr J. M. Lancaster (Dundee) said that the chemistry of the disc substance underwent changes. The polysaccharide content rose between the ages of twenty and forty and then fell, whereas the collagen level rose with age. Specimens of disc substance removed at operation showed the polysaccharide content to be lower than normal and the longer the history the lower it was. Mr J. Fairbank (Cambridge) asked if the symptoms described could not have been due to osteochondritis. Mr McDougall, replying, said he thought the mechanism of injury in prolapsed disc and in osteochondritis was the same. When the disc was damaged the annulus ruptured and in osteochondritis it was the end-plate which suffered. He distrusted myelography and relied on the clinical picture.

**Legg-Perthes' disease: etiology and treatment**—Dr J. E. Enklaar (Amsterdam) said that in treating a child's hip in which Perthes' disease had been unresponsive to the usual conservative measures he had explored the joint. In the course of the operation he had ruptured the ligamentum teres which did not bleed. It was left in the joint. Subsequent reconstitution of the femoral head had been surprisingly rapid. Since then he had explored similar hips and had found the ligamentum teres to be shortened and unusually inelastic, so that when put on the stretch it deformed the femoral head. Examination of controls showed that the normal ligamentum teres contained thick-walled arteries and many arteriovenous shunts regardless of age. There was a regular pattern of fine elastic fibres lying in parallel lines and a meshwork of autonomic nerve fibres. The ligamentum teres removed from ten patients with Perthes' disease showed consistently a second pattern of coarse fibres running at an angle to normal ones, and there was fragmentation of the autonomic nerve fibres but no vascular
abnormality. He believed that changes in the autonomic nerve mechanism during growth resulted in the abnormal inelasticity of the ligament. Unless this shortened ligament was either divided or relaxed in flexion (as he had done more recently) the changes in the capital epiphysis would persist.

The crushed chest: management of the flail anterior fragment—Mr W. Sillar (Glasgow) said that crushing injuries of the chest were becoming increasingly common. The anterior flail segment was more lethal than the lateral flail segment, and always presented certain important features. The sternum was the key to the whole respiratory mechanism and this was upset if the sternum were fractured, as was always the case in the anterior flail segment. He recommended stabilisation of the segment by the application of a plate to the sternum, which was usually fractured between the body and the manubrium. The sternum had an irregular surface which made the application of a plate difficult. He used a specially shaped plate which was malleable and could be fixed with multiple screws, none of which individually got a good hold, but collectively were secure. Instability of fractured ribs was of secondary importance but they could be stabilised quite easily with Kirschner wires. After stabilisation of the segment paradoxical respiration ceased, and the operation might render tracheotomy unnecessary. He recalled that the first report of such treatment was by Mr W. L. Henry, who applied an ordinary six-hole plate. He added four more unpublished examples, with only one death, from coronary thrombosis eleven days after operation. Mr W. L. Henry (Gloucester) said that the first plate did not fit well, but no one faced with this problem should be deterred by that. Any plate was better than no plate and the more screws it would take the better. He also emphasised that at first these patients were deceptively well, but that deterioration was rapid.

Intraneural ganglion of lateral popliteal nerve—Mr A. R. Parkes (Glasgow) recalled that this condition had been described by Brooks in 1952. It was not so uncommon as was generally believed. He had seen eight cases in six years. The patient presented with pain, paresis (usually of the anterior group of muscles, but in one patient the peroneal muscles were affected), sensory disturbance and a palpable swelling of the nerve. At operation the lateral popliteal nerve was found to contain multiple cysts which might extend to the upper limits of the popliteal space. The cysts had separated the nerve fibres, to which they had become adherent so that there was no possibility of excision of the ganglion. He had found in all cases a pedicle extending from the superior tibio-fibular joint to the main ganglion and had found that if this were obliterated and the cysts were evacuated the ganglionic swelling within the nerve disappeared. When this had been carried out there had been no recurrence, but in two cases in which the pedicle was not obliterated recurrence took place. This suggested that the mucoid was formed in the joint and extended along the articular branches into the main nerve trunk. Mr H. Bolton (Stockport) confirmed these findings. He had seen five such cases, but in two there had been no palpable swelling. He thought that exploration was warranted on the symptoms alone. Mr A. L. Eyre-Brook (Bristol) asked why, if the fluid were under pressure, the joint was not distended. Mr G. Osborne (Liverpool) said that the ganglion was not always within the nerve but sometimes only adherent to it. Mr Parkes, replying, said that not all the ganglia were tense. He had been able to pass a probe down the pedicle into the joint without difficulty.

Congenital dislocation of the hip—Mr J. A. Wilkinson and Dr C. Carter (London) described an investigation on 200 children suffering from congenital dislocation of the hip treated conservatively. They had found that the results of this treatment were seldom successful in bilateral dislocations but could be successful when the condition was unilateral. In the course of the investigation it had been noticed that the results of treatment of unilateral dislocations could be foretold by an examination of the opposite hip. If, after making allowance for age and sex, the roof of the opposite acetabulum was unduly oblique the result of treatment was likely to be unsatisfactory. A total of 149 patients had been followed up. In all but eight treatment had been begun within the first three years of life. The patients had been followed for five to ten years. There were seventeen boys and 132 girls; 107 unilateral and forty-two bilateral dislocations. The results of treatment for bilateral dislocations were unsatisfactory and those unilateral dislocations in which the opposite acetabulum had a sloping roof were equally poor. On the basis of their findings they thought that a fairly accurate prognosis could be made at the child's first attendance. The minority in whom the outlook was poor, and those with bilateral dislocations, might be better treated by surgery. Mr E. W. Somerville (Oxford) said that in those hips with only minor displacement it was wrong to say that the acetabular roof was shelving. This was only the radiological appearance due to the delay of ossification, which was always seen in the presence of instability. The acetabular roof was in fact normal in shape but cartilaginous. Treatment by operation had been equally successful in unilateral and bilateral dislocations.

Case for diagnosis—Dr J. de Mol Van Oeterloo (Scheveningen) presented an unusual case report. No diagnosis had been made. The patient was a girl of five. She had a short neck which suggested the Klippel-Feil syndrome, but there were no other stigmata of this. The limbs were normal but the
fingers were a little short. Radiographs showed that the intervertebral disc spaces were narrowed and the nuclei were all calcified. The epiphyses showed that her bone age was greater than her chronological age and there was some sclerosis around the epiphyseal lines. The hands were unaffected. The endocrinology and blood chemistry were normal. He discussed the development of the notochord and mentioned that experiments showed that anoxaemia in pregnant mice resulted in similar changes appearing in the spines of the offspring. The spinal changes were due to abnormalities in the development of the notochord.

**Shelf operation in osteoarthritis of the hip**—Dr G. F. J. M. Bär (Nijmegen) advocated the use of the shelf operation for relief of symptoms in osteoarthritic hips with instability. He emphasised the importance of correct technique with proper positioning of the shelf, which must cover at least two-thirds of the femoral head. When the operation was properly carried out the results were excellent. He had treated 133 hips in 116 patients in this way since 1945. In 1959 he had examined ninety-eight of these patients in whom 114 hips had been treated. Ninety-six hips were greatly improved and only eighteen operations were failures. The beneficial effect of the shelf was due to the support that it gave to the femoral head. This prevented further displacement, reduced irritation of the capsule and corrected muscle imbalance. The mechanical correction often improved the structure of the bone. Failures were due to the shelf being too small, too high or not well placed.

Mr D. Wainwright (Newcastle-under-Lyme) said that he had done the operation twelve times for osteoarthritis resulting from old subluxations. He was pleased with the results but had sometimes found the capsule so thick that he had been obliged to excise it. He had also found that anteversion of the femoral neck made the operation difficult. Dr Bär, replying, said that he did not advise removal of the capsule but excised the reflected head of rectus because it might reduce movement. In the presence of anteversion the flap of bone which was turned down must be angled forwards. To facilitate this the base could be incompletely divided with an osteotome.

**The nature of remodelling after femoral supracondylar osteotomy in childhood**—Mr M. S. Brett (Salisbury) said that remodelling of a bone which was angulated by fracture or osteotomy during growth took place at an astonishing rate. He had studied a number of children in whom osteotomies of the lower end of the femur had been done to correct deformity from poliomyelitis. In all, some correction was lost and the deformity tended to recur. Theoretically this recurrence could occur in two ways: by remodelling of the osteotomy angle itself or by differential growth at the epiphysis. From the children studied it seemed that differential growth at the epiphysis played the major role in the correction but that a certain amount of remodelling did take place at the osteotomy site. The most rapid correction was seen in a child in whom the epiphysis had grown through an arc of 35 degrees in twenty months.

**Treatment of pseudarthroses and fractures of the long bones by homogenous bone grafts**—Dr O. Verbeek (Amsterdam) said that autogenous bone provided the best form of graft but vascularisation took place relatively quickly and it only remained strong enough for six weeks to provide good mechanical internal fixation. On the other hand homogenous grafts revascularised very slowly and provided sound mechanical internal fixation for five months. Both types had an osteogenic effect but autogenous grafts were much more effective from this point of view. The two types could be used together with advantage, the one to provide osteogenesis, the other to give mechanical fixation. If autogenous bone were used by itself it should be supported by metallic internal fixation, and if homogenous bone were used alone it would need protection for at least six months.

**Hetero-transplants and homo-transplants of bone**—Dr M. S. Kingma (Amsterdam) said that Dutch orthopaedic surgeons had gained great experience in the use of heterogenous bone by the use of refrigerated calf bone supplied by the Bone Transplantation Service of the Netherlands Red Cross. At first the results were encouraging. Most wounds healed by first intention but a few developed sinuses. But later too many fractures showed persistent non-union. He said that transplantation of calf bone would succeed only under the most favourable conditions. The patient must be young; there must be good contact, firm fixation and prolonged immobilisation. In fact, calf bone was useful only in children for filling bone cavities. Experience with homogenous bone showed that it was useful as a graft but less good than autogenous bone. It was useful if autogenous bone were not available or in insufficient quantity. It should not be used in spondylolisthesis in adults, for extra-articular arthrodesis or for bridging defects.

**The growth of transplanted foetal bone**—Mr J. Chalmers (Edinburgh) said that there was a widespread belief that the more immature a tissue the more likely it was to survive when transplanted as a homograft. He had carried out experiments with a strain of mice which by inbreeding had achieved such purity that homografts could be exchanged between individuals as readily as autografts. These
were called isografts. Femurs from eighteen-day foetal mice were implanted both as isografts and homografts into the spleens of adult mice. At this age the femora were mainly cartilaginous with a small ossific nucleus. Each continued to grow equally up to the sixth day. After that the cartilage of the isograft grew and was progressively replaced by bone, the secondary centres of ossification developing at the right time. In the homograft the cartilaginous part continued to grow but bone replacement ceased and the bone underwent necrosis. These findings were strictly in accordance with the findings of transplanted adult homografts of bone and cartilage, and showed that immature homografts had no advantage over mature homografts. It was observed that in the homografts where the growing cartilage was not replaced by bone the secondary characteristics of the femur persisted, but in the isografts they became progressively less well marked. Professor J. J. P. James (Edinburgh) asked what happened at six days to bring about this change. Mr Chalmers replied that the changes were typical of an immune reaction. All homografts did the same.

Clinical Demonstrations

Clinical demonstrations were held on Friday, April 8, at Killearn Hospital, the Glasgow Royal Infirmary and Philiphill Hospital.

At Killearn the demonstration, organised by Professor Roland Barnes, comprised seventeen subjects presented by Mr T. B. Gardiner, Mr J. T. Brown, Mr T. W. Howat, Mr N. J. Blockey, Mr D. A. Macpherson, Mr H. E. D. Griffiths, Mr J. Stevens, Dr M. Catto, Dr B. E. C. Nordin, Mr W. Sillar, Mr A. R. Parkes and Dr Max Sussman. An original feature of the meeting was a " Puzzle Corner " — a radiological diagnostic quiz. The prize was won by Professor J. J. P. James and the runner-up was Mr H. G. Almond. A description of this meeting would be incomplete without mention of the quality of the display panels which would have done credit to any trade fair. They were the work of Mr Gabriel Donald and his staff and set a standard in display which will prove difficult for others to emulate.

At the Glasgow Royal Infirmary Mr James Patrick with Mr A. McDougall, Mr James Garden, Mr William White, Mr John White, Miss F. Soutter and Mr James Miller demonstrated, among other things, the value of chemical sympathectomy in Paget's disease, trochanter-to-acetabulum arthrodesis, arthrodesis of the knee with staples, prosthetic replacement of the femoral head, and synovia of the knee.

At Philiphill Hospital Mr T. H. Norton organised the clinical demonstration. With Mr Ian Anderson he showed five cases of osteomalacia. Mr A. G. M. Watt demonstrated various ways of treating osteoarthritis of the hip. Mr J. T. Marcroft showed synovia. Mr A. M. Keith showed examples of stabilisation of the foot and Mr K. E. Guest the late results of epiphysial stapling and of spinal fusion in young patients.

ROBERT JONES GOLF COMPETITION

The annual competition for the Robert Jones Cup was played on the course of the Pollok Golf Club, Glasgow, on the afternoon of Wednesday, April 6, during the course of the Spring Meeting of the British Orthopaedic Association. The entry of fifteen orthopaedic surgeons was rather disappointing, but the northern venue combined with the holding of the competition early in the year was probably responsible. A delightful, sunny afternoon was enjoyed by all taking part, and the competition resulted in a win for Mr W. E. Scott of Corby with the excellent score of 74 off a handicap of scratch. He won by only one stroke from Mr G. P. Arden of Windsor whose score was 90 − 15 = 75.

It is hoped that the competition next year will be held during the Spring Meeting at Manchester, when it will probably be played at the Mere Golf Club, Cheshire.

ELECTION OF EMERITUS FELLOWS, FELLOWS, MEMBERS AND ASSOCIATES

At a meeting on April 8, 1960, the following were elected:

Emeritus Fellows—Philip Wiles (Kingston, Jamaica), Philip Wilson (New York).

Fellows—A. G. Apley (London), G. P. Arden (Windsor), Paul Brand (Yellore), A. A. Butler (Montreal), M. P. McCormack (Bristol), G. P. Mitchell (Edinburgh), J. F. Silva (Colombo), E. W. Meurig Williams (Cardiff), R. I. Wilson (Belfast).


Associates—N. D. Ashe (London), T. G. Barlow (Manchester), K. V. Chaubal (Bombay), D. Churchill-Davidson (Chertsey), A. B. Cook (Epsom), C. P. Cotterill (Birmingham), W. A. Crabbe.
(Rochester), A. C. W. Da Roza (London), B. K. Datta (Liverpool), E. P. Davidson (Oswestry),
M. K. Goel (Lucknow), H. E. D. Griffiths (Glasgow), H. Harrop-Griffiths (Harlow Wood), K. G.
Kling (Leeds), J. D. McCardel (Glasgow), D. H. McMillan (Croydon), H. A. Oatley (London),
D. C. Paterson (Oswestry), M. Y. Rai (Madras), B. F. Regan (Kilkenny), M. M. Rowe (Swansea),
N. E. Shaw (Stanmore), Mary E. Shelswell (Portsmouth), F. F. Silk (Preston), R. M. Standish-White
(Salisbury, Southern Rhodesia), Harral Thompson (Manchester), E. R. Treasure (Aberdare), L. N. Vora
(Bombay), G. F. Walker (Kano), J. C. Wardill (Newcastle upon Tyne), A. M. Wiley (Toronto),
J. A. Wilkinson (London).

REPORT OF 1959 TRAVELLING SCHOLAR

Mr B. H. Brock, a travelling scholar appointed by the British Orthopaedic Association to visit
centres in Great Britain and Europe in 1959, writes:

The main purpose of my three months' tour was to study hand surgery and disorders of childhood,
particularly congenital dislocation of the hip, and, at the same time, to widen my experience of general
orthopaedic and traumatic surgery.

My first two weeks in England were spent visiting the Nuffield Orthopaedic Centre at Oxford.
Although Professor J. Trueta was unfortunately absent, I was made very welcome by Mr E. W.
Somerville, who kindly spent some time with me discussing the management of congenital dislocation
of the hip. I was also able to see many of these children at his follow-up clinic and study his late
results. Of the other problems being studied, I was particularly interested to see several cases of
haemophilia with varying degrees of joint involvement.

I went to Glasgow and enjoyed the kind hospitality of Mr Athol Parkes. I saw much interesting
material at Mr Parkes's hand clinics and in his wards at Killearn, and was also welcomed by Professor
Roland Barnes, whose clinics and ward round at Killearn were most stimulating.

My third visit was to have been to Mr Guy Pulvertaft, but he was unfortunately away, and so
early in September I spent two weeks in Paris in the delightful surroundings of the Cité Universitaire.
My visit coincided with the move of Professor R. Merle d'Aubigné's clinic into its new premises in
the Hôpital Cochin, and I was privileged to see the first operation to be performed in the new operation
theatre suite. These theatres are superbly equipped, with huge external lamps power-operated from
within the theatre, and with doors and taps operated by foot switches.

The hospital has four-bed and six-bed wards, and its top floor is a lavishly equipped air-conditioned
unit for the treatment of burns, under the care of Dr R. Tubiana. I saw much of interest in the
follow-up clinics conducted by Professor Merle d'Aubigné and his assistants, and was able to discuss
many interesting problems in the wards. Of particular interest to me was Dr Tubiana's hand clinic,
where I saw the impressive results of his neuro-vascular island transplants; I was also able to see
this operation performed by Dr J. Duparc. Dr Tubiana was kind enough to show me many of his
beautiful slides illustrating his techniques of tendon surgery.

I also visited Dr P. Queneau at the Hôpital St Vincent de Paul, to discuss with him the treatment
of congenital dislocation of the hip, of which he and Dr P. Petit have great experience. Their methods
are essentially the same as those of Somerville, but they prefer a more radical open operation with
removal of the acetabular contents.

I visited Dr J. Cauchoix at the Hôpital St Louis, where I saw a great variety of general orthopaedics
as well as trauma. In the treatment of fractures my impression was that internal fixation is more
frequently used than is common in this country. Air arthrography is widely used in the diagnosis of
internal derangements of the knee joint. Although I did not have time to visit his centre for the
treatment of tuberculosis at Berck, Dr Cauchoix showed me several of his treated patients and
discussed his methods with me. He stressed the importance of three or four months' antibiotic therapy
before surgery, and attributes his few recurrences to the lack of this. He was enthusiastic about the
trans-thoracic approach for lesions of the thoracic spine.

In Lyon Professor M. Guilleminet had kindly arranged for me to stay in the residents' quarters
of the Hôpital Edouard Herriot, a very large hospital where each speciality is in a self-contained unit.
In the Continental tradition orthopaedics and children's surgery are combined. I was received most
hospitably by Professor Guilleminet, and attended various operating sessions, being fortunate enough
to see two operations for congenital pseudarthrosis of the tibia and to assist at one of them. I saw
Professor Guilleminet perform several osteotomies for arthritis of the hip, both of the Milch-Batchelor
and Pauwels types, of which he has made a particular study. For bone-grafting operations, freeze-dried
animal bone is widely used. The technique of preparation of this has been developed and perfected
after many years of study at Lyon, and it is now prepared on a large scale.

I was also able to visit the scoliosis centre, a hospital school under the direction of Dr P. Stagnara,
and was impressed, not only with the results achieved by conservative treatment, but also by the
careful and detailed documentation. Dr Stagnara told me that in children under the age of puberty with curves of 30–55 degrees he has been able, in a very large series, to prevent further progression and the need for operation, and often to achieve some improvement.

These children are treated mostly in Abbott plasters, sometimes in distraction or Risser jackets, and have a prolonged course of physiotherapy and breathing exercises with changes of plaster over a period of two years. If spinal fusion becomes necessary, he operates with great gentleness, using sharp hand gouges only, and in addition to cancellous chips he uses a long strut graft of bank bone to stabilise the spine.

My next stop was Bologna and the delightfully situated Istituto Rizzoli which commands a magnificent panorama of the city. The older part of the building dates from at least the eleventh century and has a remarkable history as a convent, prison, barracks, and residence of the Pontifical legate. It has recently been extended by a fine modern wing.

Professor R. Zanoli was unfortunately away, but Professor I. F. Goidanich and his staff made me welcome to the operating sessions and wards. I was shown round the magnificent library, a relic of monastic days, and was particularly interested to see Putti’s beautiful private library. The operating sessions are very full and I saw a great variety of work including several reconstructive operations after poliomyelitis. Professor L. G. Lorenzi who is in charge of the paediatric department, has carried out 250 biceps to patella transplants for quadriceps deficiency and demonstrated his technique to me. He has about seventy beds of which approximately half are occupied by patients with congenital dislocation of the hip; many are treated by heavy skeletal traction before reduction and immobilisation in the Lorenz position. The legs are later rotated by strapping traction into the second position. Open reduction, when carried out, is fairly extensive, removing all the soft-tissue obstructions.

Many fractures are treated here, and internal fixation is commonly used; in some patients alignment is maintained by bone pins incorporated in the plaster. I watched several operations for pseudarthrosis of the tibia, in which the fibula was divided at its upper and lower ends and screwed to the tibia as a vascular graft.

I was also fortunate enough to hear a guest lecture by Professor L. Lichtenstein on bone tumours. I next visited Florence and Professor O. Scaglietti at the Istituto Ortopedico Toscano. As in Bologna, the hospital is beautifully sited on a hill overlooking the city, but is seriously overcrowded, and the new hospital which will shortly be completed will be very welcome.

As in Bologna, a tremendous amount of operating is accomplished during the week and I saw much of interest, including anterior spinal fusion through a costo-transversectomy approach, replacement and fixation of a congenitally elevated scapula, and varus osteotomies for subluxing hips. A large number of lumbar disc lesions are seen at this hospital, and this is reflected in the operating lists which, beginning at 6 a.m., often start with four laminectomies. These are performed under local anaesthetic which Professor Scaglietti finds helpful in locating the level of the lesion. He is insistent on myelography before operation.

I was very impressed both here and in Bologna by the excellence of the theatre radiographic service which can be relied upon to produce pictures, on radiographic paper, in forty-five seconds.

Leaving Italy, I next visited Vienna where I spent some days at the new Workmen’s Accident Hospital under the direction of Dr O. Russe. This is a very fine modern building with excellent organisation for the reception of casualties, minimal disturbance of the patient and maximal efficiency of disposal and documentation (the patient’s records precede him from one room to another by under-floor conveyor belt!).

I saw many fractures treated here and was interested to see image-intensifier x-ray apparatus being used in the reduction of several fractures. All fractures of the tibial shaft are treated by skeletal traction on a Braun’s frame with exercises for three weeks before a walking plaster is applied. Dr H. Krotschek, the first assistant, told me that only 1–2 per cent needed grafting for delayed union, and that the pseudarthrosis rate was only about two per 1,000. Intramedullary nailing of the femur is performed by the open technique here, and I was interested to see the use in this, and in other operations, of suction drainage after operation with vacuum bottles and fine polythene tubing. This was also used in Professor Merle d’Aubigné’s service in Paris.

I visited Professor K. Chiari at the General Hospital, and had a stimulating discussion on the problems of congenital dislocation of the hip. He made the interesting point that comparison of treatment in different countries was not always valid, because there seemed to be some variations in the types and natural history of the condition among different nationalities. He showed me many follow-up radiographs of his pelvic osteotomy for subluxing hips, and I was fortunate enough to see him perform his eighty-eighth operation of this type.

I next visited Linz and the Workmen’s Accident Hospital directed by Dr Jorg Bohler. This is similar to the Vienna hospital, but is slightly smaller. The staff are trained as traumatic surgeons and deal with every aspect of accident surgery. Dr Bohler is particularly interested in hand surgery, and my
visit coincided with a course in hand surgery which he runs twice a year, attended mainly by German surgeons. I was able to see several sessions of hand operations demonstrated by closed-circuit television, which proved excellent for this type of work. I also saw some of the beautiful colour films of traumatic surgery which Dr Bohler has made himself.

In addition to the hand surgery I also watched Dr Bohler and his assistants performing a closed reduction and intramedullary nailing of a fractured femur by image-intensifier radiographic control. The same technique is employed for many tibial fractures after preliminary traction.

I moved on to Switzerland and to Lausanne where Dr Claude Verdan had very kindly arranged a programme of four days of hand operations for me. This work is carried out mainly at his private clinic, though he works also at the University Polyclinic where I attended one of his student lectures. I saw various reconstructive hand operations, including tendon grafts, nerve sutures and thumb reconstructions, and learned many useful tips.

After seeing Dr Verdan’s meticulous and painstaking technique, it is not surprising that he has made a success of primary suture of flexor tendons in “no man’s land,” and I was very interested to see slides of his technique and results. He is emphatic that primary suture in this zone should only be attempted under ideal conditions and by a surgeon who has a considerable experience of tendon grafts. Like many Swiss, Dr Verdan is a fine linguist and it is fascinating to hear a clinic conducted in French, German, Italian and English.

I went next to Heidelberg where I spent several days at the University Orthopaedic Hospital, pleasantly situated by the River Neckar a few miles from the University city. Professor K. Lindemann is the director and I was received very hospitably by him and his assistants Dr G. Jentschura, Dr H. Mau and Dr A. Hopf. There are no fractures treated here since, as in many parts of Germany and Scandinavia, accident surgery is still the province of the general surgeon. Dr Mau showed me much of interest in the children’s wards, particularly scoliosis which is usually treated in the Risser localiser cast, both before and after operation, club feet treated by a very extensive medial release operation and temporary fixation with Kirschner wires, and many varus and rotation osteotomies for congenital dislocation of the hip. Among the operations that I saw performed was such an osteotomy, for which Professor Lindemann has designed a special miniature screw-plate, and a Voss “hanging-hip” operation for osteoarthritis.

The hospital has just acquired a new theatre and radiographic block: I was also impressed by its new physiotherapy school, therapeutic and bathing pools, complete with sauna.

I was fascinated by the pneumatic upper limb prosthesis developed by Dr E. Marquardt, of which I saw several varieties. This is powered by a miniature carbon dioxide cylinder, and controlled by delicate valves operated by muscle pressure. The pinch grip can be graded from delicate to extremely strong, and elbow flexion and forearm rotation are also possible. The possible adaptation of pneumatic power to replace absent muscles in poliomyelitic patients is now being investigated.

My next stop was Göteborg in Sweden where I spent a week with Professor Erik Moberg at his new Limb Surgery Clinic in the Sahlgren Hospital. This is an independent traumatic unit within a large general hospital, an arrangement that seems very satisfactory. In the out-patient clinics and operating sessions I saw many aspects of the treatment of hand injuries, and I was particularly interested to hear in detail Professor Moberg’s views on the importance of sensation in influencing the treatment and assessment of these injuries. In the treatment of fractures, wire is used in preference to screws, and all patients with a fractured neck of the femur are treated with prophylactic anticoagulants.

As in many of the centres I visited, the day begins at 8 a.m. with a combined discussion by the staff and the radiologist of all the previous day’s radiographs.

While in Göteborg I also visited Dr Erik Severin at the Orthopaedic Hospital to discuss congenital dislocation of the hip. Late diagnosis and difficult cases are rare in Sweden since all newborn babies are examined by a paediatrician to exclude the condition, and Dr Severin told me that he has not had to perform an open reduction in the last two years. He also described to me the interesting work which he and Dr Lars Billing have carried out on slipped femoral epiphysis, showing among other things that partial slipping is bilateral in a far higher proportion than had previously been thought.

My last visit was to Copenhagen where I visited the Orthopaedic Hospital and was welcomed most hospitably by Professor A. Bertelsen, Dr J. Mortens, Dr Hjalmar Larsen and Dr Bang Rasmussen. This hospital deals only with orthopaedics and only admits traumatic cases if specially referred from other hospitals. In ward rounds and operating sessions I saw a wide variety of material and methods, and found a very stimulating atmosphere. Dr Bang Rasmussen discussed reconstructive surgery of the hand with me and showed me many slides of his results, and I watched Dr Larsen operating for spondylolisthesis by removing the loose lamina only: he is carrying out a series of these and is satisfied with the results so far. I was also interested to see the plastic splint which he uses for the treatment of talipes equinovarus.
The hospital has a very fine workshop where apparatus and prostheses are made and a large shoe making shop. I was impressed too by the occupational therapy department, where a large range of aids for the disabled are available.

With Dr Mortens I attended one of the combined spastic clinics and later visited the residential school for crippled children, mostly spastic, at Geelsgaard. This is a delightful building, and its residential "homes" seem models of their kind. Dr Mortens has found that early operation to establish a better walking pattern is of definite value in many of these children, and has carried out a fair number of foot stabilisations by the Grice method and corrections of knee flexion deformities for this purpose.

He feels that surgical correction of internal rotation, flexion and adduction deformities is best carried out at a later age by derotational osteotomies of the femur, if the deformity is severe enough to warrant it.

Professor Bertelsen also kindly took me to the Rehabilitation Centre at Hornbaek Kurbad, a seaside hotel on the north coast which was acquired during the poliomyelitis epidemic, where I saw many long term orthopaedic and rehabilitation patients, and children with Perthes' disease. A nation wide survey of the treatment of Perthes' disease is being carried out, with five different methods in various centres, and the comparison of the results should be of great value.

It was difficult to leave the hospitality of Copenhagen, and indeed the friendliness and hospitality that I met in all my visits will not easily be forgotten. I am very grateful to all my hosts for the trouble taken in speaking in English, in translating for me, and on rare occasions for their courteous toleration of my inadequate French. I saw many new methods and techniques, learned a great deal, and found much to stimulate my thoughts. Among the impressions that stand out are the tendency on the Continent to a wider use of various sorts of internal fixation for fractures, an increasing acceptance of the value of derotational osteotomy in congenital dislocation of the hip, and the widespread use of the Pauwels adduction osteotomy for the osteoarthritic hip.

I am extremely grateful to the British Orthopaedic Association for the opportunity to make this tour.

REGIONAL ORTHOPAEDIC CLUBS

EAST ANGLIAN ORTHOPAEDIC CLUB

A meeting of the East Anglian Orthopaedic Club was held at the Royal Air Force Hospital, Ely on January 30, 1960.

Medullary nailing for delayed healing of fractures of the femur—Wing Commander D. M. Keir discussed twelve examples of delayed healing of fractures of the femur treated by Kuntscher nailing. The patients had been treated previously by 1) skeletal traction and Thomas's splint, 2) skin traction and Thomas's splint, 3) plaster spica, and 4) plaster spica and traction. The complications that necessitated further treatment were delayed union, shortening of more than half an inch, overlap and angulation, and extreme stiffness of knee. The treatment carried out was Kuntscher nailing with or without bone chips, and the results showed satisfactory improvement.

Orthopaedic problems—Flight Lieutenant H. J. K. Vieyra showed a series of orthopaedic problems. 1) Bilateral dislocation of lower end of ulna with diastasis of inferior radio-ulnar joint. This was treated by excision of the lower end of the ulna. In discussion it was suggested that this deformity was congenital in origin. 2) Fractured femur. Radiographs suggested the presence of an osteogenic sarcoma. The patient was treated by radiotherapy and disarticulation through the hip. Secondary deposits were seen to increase in lungs and death occurred nine months later. 3) A woman with paraesthesia down the left arm and fingers was found to have a hard tender swelling in the humerus. This was explored and found to be a cavity underlying haemorrhagic cortical bone. Histology showed it to be a simple bone cyst. 4) A boy of five had a fracture through what appeared to be a simple bone cyst. Serial radiographs showed that the lesion was increasing in size. It was explored and evacuated and found to be a giant-celled tumour. The cavity was filled with bone chips taken from the father and remodelling of the bone had taken place. 5) A man of twenty-two with multiple fractures and a brachial plexus injury of the fifth and sixth cervical roots. There was a little control of finger movements but virtually nothing else. In discussion it was suggested that arthrodesis of the shoulder should be carried out and that the patient should then be fitted with a flail arm support.

Madura foot—Squadron Leader J. K. Oyston showed coloured slides on his work on Madura foot carried out at Aden.

Tendon grafting—Wing Commander Keir showed a film depicting Professor P. V. Brand's work on tendon grafting for paralysis of the intrinsic muscles of the hand in leprosy.
NEW ZEALAND

NEW ZEALAND ORTHOPAEDIC ASSOCIATION

The 1959 meeting of the New Zealand Orthopaedic Association was held at Christchurch on September 28-30, 1959, under the presidency of Mr Allan Macdonald (Auckland). Visitors from overseas included Mr John Lahz (Brisbane), President of the Australian Orthopaedic Association, and Mr H. Osmond-Clarke (London). The meeting followed a postgraduate course in orthopaedics given by Mr Osmond-Clarke, who was invited to New Zealand by the Christchurch Hospital Postgraduate Committee and the New Zealand Orthopaedic Association. Mr Osmond-Clarke was elected an honorary fellow of the New Zealand Orthopaedic Association.

Central displacement stabilising operation on the hip—Mr W. J. B. McFarland (Auckland) said that he preferred this title to that of central dislocation. Although displacement osteotomy gave satisfaction to some patients, the late results were unsatisfactory to many. Arthroplasty was an unreliable treatment for osteoarthrosis of the hip and the prolonged immobilisation after arthrodesis excluded it for older patients. The advantages of the central displacement operation were: 1) it was relatively easy for both surgeon and patient; 2) the short period of immobilisation and short stay in hospital; and 3) the high percentage of excellent results.

Prognosis and assessment of low back injuries in compensation cases—Mr Allan Macdonald (Auckland) began a lively discussion on the many aspects of this subject. It was agreed that these injuries remained a major orthopaedic problem.

Rupture of the tendo calcaneus—Professor N. W. Nisbet (Dunedin) reviewed the history of patients with this injury. The postulated etiology of avascular necrosis was not supported by the histological appearances in specimens he had examined. He had found it impossible to make the tendon avascular by experimental methods unless the tissues were isolated by an acrylic sheath as well as by the application of constricting ligatures. This was because revascularisation occurred rapidly. He suggested that rupture of the tendon after severe activity might occur because the tendon exerted a piston-like action in its paratendinous sheath, and corresponding changes occurred within the tendon to those seen in the paratendon. In some instances the tendon cells swelled, producing an enzyme which affected the fibres adversely so that they became weak and ruptured under the sudden strain.

The present position of surgery of the hip and spinal column surgery—Mr H. Osmond-Clarke (London) reviewed current British opinions. He discussed the relative merits and indications for arthroplasty and arthrodesis of the hip in osteoarthrosis, and stated that osteotomy was again being extensively used, even for bilateral cases, with satisfactory results: internal fixation with a spline had considerably lightened the after-care. The probable cause of pain in osteoarthrosis of the hip was discussed: there seemed to be an intra-osseous vascular element, which could account for the relief of pain that followed osteotomy with only slight medial displacement of the femoral shaft. This led to a re-appraisal of the older operations in which the femoral head was drilled by the transcervical route. The treatment of tuberculosis of the spine by a direct attack on the bony focus in the vertebral body, coupled with the prolonged administration of antibiotics, was described. Considerable care and experience were required in choosing the right case and a high standard of surgery was needed. The results were good and bony fusion was often obtained. For fusion of the cervical spine with degenerative disc disease, Mr Osmond-Clarke favoured the lateral approach behind the carotid sheath.

Localised ischaemia of the calf—Mr Allan Aldred (Dunedin) said that localised infarcts of muscle could occur in people who were otherwise healthy. When a small area of muscle was involved the condition might resolve gradually without treatment. The use of anticoagulants was reasonable in the early stages. When the condition was established and extensive, consideration should be given to excision of the necrotic muscle. This shortened the period of disability and reduced any contracture that might follow. He described the typical appearances seen on femoral arteriography: there was a blush of contrast medium round the lesion different from that seen in any other conditions.

Anteversion of the neck of the femur—Mr R. Blunden and Dr R. Gibson (Christchurch) used a standard radiological technique for the routine review of patients with congenital dislocation of the hip and for investigating children with severe in-toeing. They considered anteversion of 40 degrees or less to be of no significance. Any correction needed was obtained by subtrochanteric rotation osteotomy with plate fixation. In congenital dislocation of the hip treated by closed methods the osteotomy was done when the primary treatment was completed. In patients with severe in-toeing, operation was not done under the age of four unless the anteversion was increasing.

Research in the Department of Surgery of the Medical School of the University of Otago on basic problems in bone grafts—Professor N. W. Nisbet (Dunedin) said that in bare autologous and
The homologous cortical bone grafts in rats it was found by histology that osteocytes survived for long periods because of their protected position in the lacunae. Death of the graft did not account for the behaviour of bone homografts. Slowness of the growth of the granulation tissue, its reluctance to approach the graft and delayed vascularisation were the early signs of the recognition of “foreignness” of the bone homografts. A prolonged antigenic stimulus from the osteocytes caused the formation of abnormal collagen. It was presumed that this tissue was never at any stage suitable for osteogenesis. In bone autografts the granulation tissue, which was a suitable precursor tissue for osteogenesis, appeared in the concavities of the graft. The presence of spaces seemed important and offered an explanation for the superiority of chip grafts. The cellular manifestations of the homograft reaction to bone homografts appeared later, and seemed to be independent of the earlier phases which produced the abnormal precursor tissue. In animals immunologically tolerant to a specific donor, both the early abnormal repair and the later cellular homograft reaction to bone homografts were suppressed, leading to autograft-like behaviour. The inflammatory component of the homograft reaction may not be solely responsible for the failure of bone homografts and the early abnormal repair might be under a different control.

With Dr Barbara Heslop and Dr Irmgard Zeiss, research into the basic biology of bone graft repair continues, and also into the immunological problems of the transference of tissues. Other workers in this field had found that animals immunologically tolerant to a specific donor sometimes developed the interesting complication of “runt” disease, or “homologous cell disease.” The affected rats in this research had displayed a “red” and “pale” phase, the exact description of which was not yet to be found in the literature. This seemed to be comparable to the red and pale partners in parabiotic intoxication. The pathology of runt disease in rats was part of current research in the department.

A review of fifty Judet arthroplasties—Mr R. H. Dawson (Palmerston North) had reviewed fifty patients operated upon at the Palmerston North Hospital. Improvement was not maintained in patients who were heavy and active, though many of the lighter patients still had good function six years after operation; all except one showed evidence of movement of the prosthesis in the neck of the femur. Fracture of the stem of the prosthesis occurred in only one patient, and when the broken prosthesis was replaced the new one re-fractured after a few months; this was probably due to mechanical causes because the patient suffered from protrusio acetabuli. The tendency of the prosthesis to migrate inwards was noted in four cases and there were four dislocations. The paper was followed by a short film showing an excellent functional result after removal of a prosthesis and a displacement osteotomy.

Non-tuberculous infection of the spine—Mr A. W. Beasley (Wellington) said that the traditional attitude towards pyogenic infection of the spine was that it was somewhat rare compared with tuberculosis. The space in the literature devoted to such infections was small. Yet nine cases had been admitted to the Wellington Hospital in three years, compared with four patients with spinal tuberculosis. He thought that this was further evidence of the increased incidence of acute osteomyelitis in New Zealand. He reviewed the clinical findings and treatment of eleven patients. Involvement of the appendages with an extradural abscess and paraplegia was frequent. Treatment by rest with antibiotics and occasionally drainage of the abscess was satisfactory for vertebral body involvement, but prompt and wide decompression was essential in the treatment of an extradural abscess.

Clinical demonstrations—The orthopaedic staff of the Christchurch Hospital presented clinical cases, and a dinner was held at the Canterbury Club, at which Mr Lahz (Brisbane) and Mr Osmond-Clarke (London) were the guests of honour.

DENMARK

DANISH ORTHOPAEDIC ASSOCIATION

The Association held two meetings during 1959. At the meeting in May held in Copenhagen the following subjects were discussed:

Lumbo-sacral fusion—Dr Birger Eriksen (Holstebro) reviewed seventy patients treated by lumbo-sacral fusion at the Orthopaedic Hospital, Aarhus, between 1950 and 1955 and followed up to 1958. Eighty-four per cent were followed for five to eight years. In sixteen patients only the fifth lumbar vertebra was fused to the sacrum: forty-five patients had two and nine patients three vertebrae fused to the sacrum. In all cases banked bone was used. In many of the patients Boswell’s technique was used and, in all, the small intervertebral joints were excised. A plaster bed was used for three months, and thereafter a plaster jacket for two months. The operation was usually required for a degenerated disc lesion or spondylosis. Fifteen patients had been previously operated upon—mainly for disc protrusions, nine of the patients had spondylolisthesis. Most patients were women, and the age distribution was from eighteen to fifty-six years. Radiographs showed solid fusion in 62 per cent. In 32 per cent a
pseudarthrosis occurred, and the result was uncertain in 6 per cent. Nine patients had a second operation and the final results as judged radiologically were: 75 per cent solid fusion; 19 per cent pseudarthrosis; and 6 per cent doubtful. The clinical results were difficult to assess, but three-quarters of the patients were more or less improved. Some pseudarthroses, however, were present among the patients clinically improved. In conclusion it was stressed that the operation was of no real value in heavy workers, and that autogenous bone was preferable to banked bone.

Calvé-Perthes' disease—Dr Inge Reimann (Sonderborg) reviewed thirty-one patients with Perthes' disease. Twenty-three were boys and eight girls, with an average age of seven years at the start of treatment. Twenty-five of the patients were treated out of bed in their homes with a weight relieving Thomas's caliper for two to three years. At review two to four years after the beginning of treatment no patient complained of pain; in five there was a limping gait, but no positive Trendelenburg sign. Only ten patients had full movement. No patient showed a perfectly normal head radiographically. It was considered that the results obtained justified the method of treatment used, which enabled the children to stay in their homes and attend school. In discussion it was agreed that the radiographic results obtained by the three different methods employed in Denmark should be compared: by immobilisation in bed and traction, by bed rest with mobilisation allowed, and by ambulant treatment with weight-relieving devices.

Charnley's stabilisation of the hip—Dr E. Jensen and Dr J. Mortens (Copenhagen) gave a detailed account of forty-three patients after the Charnley stabilisation operation of the hip. This paper is published in full elsewhere in this issue of the Journal.

Sympathectomy for diseases of the extremities—Dr A. Bertelsen (Copenhagen) had reviewed 150 patients with arteriosclerosis in the lower limbs treated by lumbar sympathectomy. He found improvement in 42 per cent, with full relief of pain. The symptoms were unaltered in 34 per cent, and worse in 18 per cent. In 6 per cent amputation had to be performed. He was well aware that in a group of patients who had not had treatment the course of the disease might show a similar distribution of "results." Such a review had started in his department. However, he was at present inclined to think that in most cases the effect of a sympathectomy should be tried before a by-passing operation was considered. Eight such operations had been performed at his department with good results.

In thirty-one patients with Bürger's disease similar results to those in the arteriosclerotic patients treated by sympathectomy were obtained. In six patients with Raynaud's disease half of the patients improved; the two best results also had a bilateral adrenalectomy. Of eighty-two patients with angiopathy from poliomyelitis 80 per cent were improved after sympathectomy and of twenty patients with post-traumatic dystrophy 70 per cent were improved.

The second meeting of the Association was held in Copenhagen in November 1959. Mr E. A. Nicoll and Mr Alan Hardy were invited as lecturers to the meeting.

Treatment of paraplegia from fracture-dislocation of the thoraco-lumbar spine—Mr Alan Hardy (Sheffield) gave the reasons for the establishment of the spinal injuries unit at Lodge Moor, Sheffield: these were the need to deal with the primary treatment and also the subsequent rehabilitation. He did not ascribe the improvement in results to new operations or technique, but to the handling of any one phase of the disability at the right moment, and to the concept that each problem—the orthopaedic lesion, the neuro-muscular mechanisms, the bladder, the bowel and the skin—were closely related. The objects of treatment were: 1) to prevent complications such as bed sores, joint contractures and deformities, and infection of the urinary tract; 2) to establish as much compensatory activity as possible; 3) to promote all possible recovery of nerve function.

To achieve these objects it was necessary to have: 1) early and accurate appreciation of the extent and nature of the nerve injury; 2) clinical and radiological views of the bony injury; 3) consideration of any methods to prevent further damage to nerves and promote healing; 4) positive but flexible routine of nursing management. An excellent description of the various nerve lesions was given. Mr Hardy's experiences suggested that spinal shock with absence of all reflex activity did not last for more than a few hours and that the order of return of reflex activity followed a characteristic pattern: usually within a few hours the glands, bulbar and anal sphincter and skin reflexes returned, followed within a matter of days by fanning of the toes on plantar stimulation and later flexor response of the great toe and contraction in the hamstrings. True extensor response might take several weeks to become established, like the withdrawal action on plantar stimulation. If this pattern of returning reflex activity occurred with total loss of motor power and sensation the cord lesion was complete and permanent. It was vitally important to estimate the state of the cord below the level of the injury, because this was the only way to assess the nature of the injury itself. More often than not observation of motor power did not help greatly because it was usually absent, as in incomplete cord lesions. Evidence of sensory appreciation was seen within a few hours after injury, often first to be appreciated as sacral segmental sparing—a
clear indication of continuity in part of the cord; and if reflex activity with weak motor power could also be demonstrated a much better prognosis could be given. The neurological examination was important in low cord injuries, especially at the level of the thoraco-lumbar junction. It was here that the sacral cord and lumbar nerve roots lay side by side while the actual lumbar cord segments were sited at a higher level. The forces of displacement when applied to cord and root produced different responses. A cord might be pulsed but the roots might survive. The forces transmitted to the spinal cord in most cases of traumatic paraplegia were far greater than the minimum required to produce irrecoverable cord damage. This was not so when the same forces were applied to the roots. It was important to determine early whether the cord or the roots were damaged, so that potentially useful function might be protected and all possible recovery ensured. Continuity of lumbar root function might show itself at an early stage only by sensory sparing in the corresponding segments; motor recovery in these segments might occur much later. The lumbar roots played the major part in postural stability, and even a few roots spared might mean the difference between walking with the aid of calipers and merely swinging the limbs by pelvic tilting. The Sheffield group considered that operative reduction and fixation were indicated in certain selected cases of unstable fracture-dislocations. Slides were shown to indicate the three types of fracture of the thoraco-lumbar spine. The simple compression fracture was stable and reduction was not required (less than 10 per cent of cases of paraplegia were associated with simple compression fractures and in half of them the cord lesion was incomplete). When the flexion forces were expended on the ligaments with consequent rupture before bony damage could take place a simple dislocation occurred: this was more common in the cervical region; only two such cases had been seen at the thoraco-lumbar junction, with transient paralysis. The third type, the torsional fracture-dislocation, common in mining accidents, was the commonest type to produce paraplegia. It was a highly unstable fracture and required operative fixation. Prompt relief of pain and astonishing ease of handling the patient were experienced after operation. Operation was never used in compression fractures at any level, nor in fracture-dislocations from T.1 to T.9 levels, where the damage was entirely to the cord.

Treatment of fractures of the thoraco-lumbar spine—Mr E. A. Nicoll (Mansfield) defined the two main types of fractures that occurred at the thoraco-lumbar junction and discussed their treatment. Such fractures are twenty or thirty times more common in miners than in other members of the English community. He stressed that residual deformity was often unpreventable, that it was usually predictable from the beginning and that, if the deformity was not severe, it was compatible with full function. Among those returned to full work in the mines residual deformity was present in 48 per cent. The result depended not on the anatomical result but on the stability between the damaged vertebrae—achieved either by conservative or operative methods. In his experience approximately 50 per cent of thoraco-lumbar fractures were stable from the beginning: in these, reduction and fixation in plaster were unnecessary; they should be treated as a "sprained" back. The two main types of fractures of the thoraco-lumbar spine to be differentiated were: 1) stable fractures that could safely be treated as soft-tissue injuries; and 2) unstable fractures and fracture-dislocations, which were very dangerous and required the most meticulous fixation. The stable fractures were those in which there was no rupture of the posterior ligaments and no fracture of the facets or laminae: they included all simple compression fractures. The unstable types included all fracture-dislocations, all fracture-subluxations—often wrongly diagnosed as compression fractures—and all rotation fractures involving the facets or laminae, in which the upper vertebra swung on the lower, taking with it a slice of the upper part of the body of the vertebra below. In these unstable fractures protection must be meticulous if damage to the cord and nerve roots was to be avoided. Stability could be achieved in two ways: either by controlled anterior fusion in plaster or by operative posterior fusion. Mr Nicoll's preference in recent years had been towards early grafting with twin tibial grafts firmly secured to the spinous processes.

Cancellous bone grafting in the treatment of non-union of fractures of the long bones—Mr E. A. Nicoll (Mansfield) gave his concept of the causes of non-union of fractures in the long bones: avoidable ones being infection, distraction and interposition of soft tissue; the unavoidable causes being vulnerability of the blood supply of one or both fragments and a gap due to excessive comminution or actual loss of bone. In the "avoidable" cases Mr Nicoll stressed the importance of early open reduction when interposition of soft tissue was suspected by persistent lateral displacement. He had never regretted doing an early operation for this indication but had often regretted having been too conservative. In the shaft of the femur, particularly, the penalty of non-union was considerable in terms of a stiff knee, and he now preferred to treat these fractures by medullary nailing. Discussing the "unavoidable" causes of non-union he mentioned that fractures in the lower third of tibia often healed badly because of interference with blood supply. When a gap was present due to excessive comminution or loss of bone he recommended the use of a cancellous insert graft as soon as possible. He had used the same operation for established non-union from various causes. In his technique he believed in securing firm
fixation by plating using a massive cancellous block from the iliac crest to fill the gap due to the accident or due to the excision of the pseudarthrosis. In some cases the internal fixation was so secure that external fixation was unnecessary, but no risk must be taken of the fixation failing before union was established. Union had occurred as early as six weeks after operation, but in patients with large gaps and avascular tissue it might take six months. Only in one of the forty patients reported had non-union persisted after this operation.

**Microradiography in patients with bone disease**—Dr H. H. Bohr (Copenhagen) gave an account of thirty-five patients with halisteresis of bone in which the conventional histological examinations and chemical analyses were done as well as microradiography. He mentioned previous work on the subject, and described the normal findings in microradiographs; up to the age of eighty there was evidence of new bone formation. In genuine osteoporosis the structure of the microradiograph was normal, but in osteomalacia and rickets the microradiographic structure was altered, mainly due to the fact that crystals of apatite were lacking in the osteoid tissue. Treatment with vitamin D could establish a normal structure parallel to the alteration in the Ca/N-ratio.

**Dysplasia epiphysialis capitis femoris**—Dr E. Karp Pedersen (Refnaes, Copenhagen) gave a preliminary report on the concept that “dysplasia epiphysialis capitis femoris” was a disease *sui generis* to be differentiated from Calvé-Legg-Perthes’ disease. Among 672 patients with the diagnosis of Perthes’ disease he had found forty-two patients in whom the pattern was atypical. He reported the findings in twelve such patients observed personally: radiographs showed no collapse or gross fragmentation of the head of the femur. The structure of the head was granular but the final result was normal structure and a normal shape of the head. He demonstrated also some patients in whom one hip showed this anomaly but the other in the same patient showed a typical picture of Perthes’ disease.

**ANNOUNCEMENTS**

**ROYAL COLLEGE OF SURGEONS OF ENGLAND**

**ROBERT JONES LECTURE 1960**

The Robert Jones Lecture will be delivered at the College by Mr H. J. Seddon, C.M.G., at 5 p.m. on December 8, 1960. The subject of the lecture is “The Manchester Ship Canal and the Colonial Frontier.”

**BRITISH ORTHOPAEDIC ASSOCIATION**

**ARRANGEMENTS FOR FUTURE MEETINGS**

As previously announced, the Autumn Meeting will be held in Leeds and Harrogate on October 28–29, 1960. The previous day, October 27, will be devoted to an Instructional Course to be held at the Royal Hall, Harrogate. The Instructional Course programme is as follows: 10 a.m.—Neurological Syndromes in the Upper Limb (Dr H. G. Garland); 11.30 a.m.—The Ischaemic Foot (Mr H. S. Shucksmit); 2 p.m.—Symposium on Research and Progress in Amputations and Prostheses. The course is open to all those interested upon payment of the fee of 10/–.

The Spring Meeting, 1961, will be held in Manchester from April 13–15.

**TRAVELLING SCHOLARSHIP**

The British Orthopaedic Association invites applications from its Fellows, Members and Associates for a Travelling Scholarship in orthopaedics of about three months’ duration to visit centres in Great Britain or other European countries. The sum available will be £500. Candidates should apply to the Honorary Secretary, British Orthopaedic Association, 47 Lincoln’s Inn Fields, London, W.C.2, setting out the object of the proposed visit, the proposed itinerary, and previous clinical experience and contributions to research, and should give the names of two referees, who must be Fellows of the Association. Twenty copies of the application should be supplied. The closing date for receipt of applications is November 30, 1960.

**SCIENTIFIC SOCIETIES AND REGIONAL ORTHOPAEDIC CLUBS**

**HAND CLUBS OF GREAT BRITAIN**

The Hand Club and the Second Hand Club will hold an Open Meeting at the Royal College of Surgeons of England, London, at 10 a.m. on Saturday, November 19, 1960. Papers from non-members will be welcomed. Further details may be obtained from Mr H. Graham Stack, 150 Harley Street, London, W.1.