Alfred Herbert Tubby

Alfred Herbert Tubby played a leading part in the development of orthopaedic surgery, particularly during its transition from the period of tenotomy and appliances to that of open operative correction of deformity.

He derived from South Country yeoman stock and was born on May 23, 1862, the son of Alfred Tubby, a corn merchant living in Great Titchfield Street, London, and his wife Frances, née Roe. A few months after the child's birth his father died. He was educated at Christ's Hospital, then in Newgate Street, London, where he had as schoolfellow F. J. Smith who was to become Tubby's colleague on the staff of the National Orthopaedic Hospital and a well known physician to the London Hospital; author of a standard work on medical jurisprudence. Tubby in later years was Consulting Surgeon, Governor and Almoner to Christ's Hospital. On leaving the Bluecoat School he proceeded to Guy's Hospital where he distinguished himself as a prizeman, qualifying in 1884 as a Member of the Royal College of Surgeons. At the final medical examinations of London University in 1887 he won the gold medal in medicine and the gold medal in surgery besides gaining honours in anatomy, materia medica and forensic medicine; the same year he became a Fellow of the Royal College of Surgeons. He proceeded to the degree of Master of Surgery in 1890. At different periods he studied at Halle and Leipzig; it was this German training that attracted him to the work of Lange and Vulpius on tendon transplantation in infantile paralysis.

STUDIES OF TENDON REPAIR

Tubby was appointed senior demonstrator of physiology at Guy's Hospital and while occupying this post he carried out important researches on tendon repair, employing new staining methods he had learnt from Beneke of Brunswick. The Achilles tendons of full-grown rabbits were divided with antiseptic precautions, the punctures being protected with gauze. The animals were killed at intervals from three days up to thirty-three weeks, one at thirteen months after tenotomy. His observations on the microscopic sections were reported in 1892 in the Pathological Society's Transactions and Guy's Hospital Reports: "With reference to the influence of effused blood it was shown that for firm union to take place, sufficient blood must be poured out to fill the tendon sheath so that it retained its tubular form to the same degree as before operation, and further, that the effused blood formed a pabulum or nidus for the large plasma cells. That the tendon is not capable of perfect regeneration, even after thirteen months, was shown by the fact that the fibrous tissue of the bond of union was not arranged in parallel striae, and that the square fixed tendon cells were not found in it. As to the tissue, which was mainly instrumental in forming the new fibrous tissue, it was quite clear that the square fixed tendon cells took no part, that the leucocytes merely a subordinate one, and that the chief agents in the whole process were the large plasma cells having the following characteristics: They are frequently multi-nucleated, they have several processes and are full of granular protoplasm. The *modus operandi* is as follows:—At first the effusion consists of red blood corpuscles, fibrin and leucocytes. The first two rapidly disappear, the latter more slowly under the influence of the plasma cells, which migrate from the cut ends of the tendon and from the tendon sheath. They seem to gradually absorb the leucocytes and take their place. These plasma cells subsequently develop into fibrous tissue and form also the cell-walls of temporary blood-vessels which run through the scar-tissue."

In 1891 Tubby became surgeon to the Evelina Hospital and to the National Orthopaedic Hospital. In 1894 he was elected assistant surgeon to Westminster Hospital and four years later became surgeon, an appointment he held for thirty years. He was given charge of the orthopaedic department and lectured on clinical and orthopaedic surgery. He also served as Dean of the Medical School, an office in which his keen business instincts were of value to the administration of the hospital. He was also consulting surgeon to the Hospital for Hip Disease, Sevenoaks.

BRITISH ORTHOPAEDIC SOCIETY

In 1894 Tubby was elected joint secretary of the newly formed British Orthopaedic Society, whose avowed object was the advancement of orthopaedic surgery. This body came into being after an informal discussion between a group of surgeons interested in the surgery of deformities, who met at Bristol during the Annual Meeting of the British Medical Association. Meetings were held in London or a provincial centre, the programme consisting of clinical demonstrations, papers and discussions. Thus on May 24, 1895, the Society visited the Royal Infirmary and Southern Hospital, Liverpool; at the Medical Institution Robert Jones introduced a discussion on the treatment of intractable talipes equinovarus, demonstrating a remarkable number of patients cured of this stubborn deformity. But the Society lasted only for about four years; it published three slender volumes of its transactions which serve as a permanent record of an early effort to bring orthopaedic surgeons together to discuss their art and make social contact. The Society was a forerunner of the British Orthopaedic Association and in one way was more fortunate than its greater successor in that all its gathered grain was brought together into its own storehouse, whereas the Association unwillingly scattered its harvest for many years before it was able to shelter its products under its own roof.

IMPORTANT PUBLICATIONS

In 1896 Tubby published a book entitled *Deformities: a treatise on orthopaedic surgery* (Macmillan & Co.). It was the best work on orthopaedic surgery that had yet appeared in England and was something of a landmark in the development of this branch of surgery. It was based mainly on the experience the author had gained at the National Orthopaedic Hospital and the Evelina Hospital for Sick Children. He drew on his own hospital case notes; of the lavish number of illustrations produced two hundred were original. But he cast his net widely in order to gather the thinking and practice of surgeons in America and the Continent. The work was an authoritative presentation of orthopaedic surgery as understood in the closing years of the nineteenth century; it revealed how great had been its progress since W. J. Little in 1839 published his classic *A Treatise on Club-Foot and the Nature of Analogous Distortions*. But Tubby felt that this branch of surgery had still to reach maturity; a passage in the preface of his book makes strange reading: "The practice of Orthopaedic Surgery in England does not include all phases of diseases of bones and joints such as tuberculous ostitis and arthritis of the hip and knee, on what grounds it is difficult to understand." There is an admirable description of tuberculosis of the spine in the first three chapters but skeletal tuberculosis is never mentioned again. Congenital and acquired deformities are dealt with on a regional basis. There is a whole chapter on the deformities of rickets, a very prevalent disease at the time. The author's researches on tendon repair are described at length.

During the last decade of the last century tendon transplantation attracted widespread attention. This operation was first performed by Nicoladoni in 1882 when he attached the peronei to the tendo achillis in a patient with talipes calcaneus. In 1892 Parish and Drobnik independently applied the same method to other forms of foot paralysis. In 1894 Winkelman analysed a series of cases in which he had performed the operation. This was followed by a

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series published by Goldthwait; and Townsend wrote on tendon transplantation in the hand. The last paper read before the British Orthopaedic Society in 1898 was one by T. H. Openshaw on tendon transplantation.

COLLABORATION WITH SIR ROBERT JONES

In 1903 A. H. Tubby collaborated with Robert Jones in publishing a book on *Modern Methods in the Surgery of Paralysis* (Macmillan & Co.). The work consisted of a summary of all that had been done by tendon transplantation and arthrodesis in the treatment of paralysis together with their own experience of these methods. The many indications for tendon transplantation and its technique were described. Their treatment of spastic paralysis was an innovation; little had been attempted for this type of patient; indeed physicians discouraged surgery. The authors advocated tenotomy of adductors, hamstrings and tendo achillis and nursing the patient on an abduction frame or Thomas's calipers in abduction, to be followed by re-education walking exercises. By these procedures they were able to get these patients walking and capable of instruction. For the spastic pronated hand the pronator radii teres was converted into a supinator by detaching its insertion, with periosteum, passing it through the interosseous membrane, behind the radius and re-attaching it to the outer side of the bone. Flexor carpi ulnaris was transplanted into extensor carpi ulnaris and flexor carpi radialis into the radial extensors. Arthrodesis was sometimes combined with tendon transplantation in patients with infantile paralysis; more often fusion of the ankle was carried out. They had performed over a hundred such operations. The publication of this work half a century ago was a distinct landmark in the progress of orthopaedic surgery.

In 1912 Tubby published a new edition of his text-book with the ominous title *Deformities including Diseases of the Bones and Joints*. Sixteen years had passed since its first appearance and during the interval the whole field of orthopaedic surgery had greatly advanced, with a corresponding literature dealing with it. He had been obliged to rewrite the whole work and to arrange the various subjects according to their etiology and pathology rather than on a regional classification as in the previous edition. Such was the accumulated material that the author had to issue the work in two large volumes, which contained seventy plates and more than a thousand illustrations, of which four hundred were original. In 1896 Tubby protested at the exclusion of diseases of bones and joints, apart from the spine, from the province of orthopaedic surgery. In 1912, in the following words, he boldly declared that orthopaedic surgery is the surgery of the entire locomotor apparatus: "In England, contrary to the custom abroad, works written on 'Orthopaedic Surgery,' although they have dealt with tuberculosis of the spine, have not included tuberculosis and many other forms of diseases of the bones and joints elsewhere. And this in spite of the obvious fact that in the practice of Orthopaedic Surgery a surgeon is constantly called upon to deal with such morbid conditions and their results. It has been my attempt to remedy this somewhat illogical state of affairs, and to treat the subject from its actual standpoint which is the surgery of the entire locomotor apparatus, dealing not only with actual deformities, but also with those morbid processes which involve potential deformity. It is not claimed that the scope of the orthopaedic surgeon's work is thereby enlarged, since he undertakes already the treatment of malformations and deformities of the muscular and osseous systems, which demands a full acquaintance with the pathology of such conditions and with the essential therapeutic methods. A considerable portion of the work has therefore been devoted to a description of arthritic and osseous diseases, as indicated by the amplification of the former title into 'Deformities, including Diseases of the Bones and Joints: a Text-Book of Orthopaedic Surgery.'" This publication had the appearance of a work of reference; the whole world literature had been well sifted, to which Tubby's many contributions were added. Each subject was well balanced; etiology, pathology and treatment were given proper consideration. It was the best work on orthopaedic surgery in any language and has scarcely been equalled since. The clear descriptive

power of the author was not least of its features. Its reading still imparts a peculiar delight and that not without profit.

WAR-TIME ACTIVITIES

Within three years of the publishing of this great work on orthopaedic surgery the upheaval of the first world war occurred. Tubby, who had held a commission as Major in the Royal Army Medical Corps since the inception of the Territorial Force, was called up for service to the Fourth London General Hospital with the rank of Lieutenant-Colonel. In 1915 he was seconded for service as Consulting Surgeon to the British Mediterranean Force, with the rank of Colonel, Army Medical Service, but was soon transferred to the Egyptian Expeditionary Force. He was stationed at Alexandria with Sir Victor Horsley as his colleague until Horsley was transferred to Mesopotamia. His war experiences were related in a book, *A Consulting Surgeon in the Near East*, published in 1920. He gave a graphic account of the Gallipoli Campaign, of the sufferings of the troops, and the difficulties with sanitation which had to be surmounted. He organised fracture and orthopaedic treatment in Egypt but was unable to get sanction for segregation of fracture patients or special hospitals for their treatment. He had much to say about the duties of a consultant and offered helpful criticism about his relation to the establishment and the need for facilities for consultants of different groups to meet and discuss their problems; a consultant often found himself isolated.

He returned to civilian practice in 1919 and afterwards contributed a series of articles to the *Clinical Journal* which in 1925 were published in a small volume entitled *The Advance of Orthopaedic Surgery*. In 1928 he made his last contribution in the form of a well illustrated article in the *Lancet* on the selection and standardisation of surgical instruments, with microscopic photographs of knife blades, examining their hardness and ascertaining the effect of the stainless process upon them. He concluded that the economy and labour-saving advantages obtained by using stainless steel instruments were warranted by the fact that the metal suffered no loss of hardness.

INTERESTS IN ART AND SCIENCE

Tubby was a man of wide culture and many interests. He was an excellent linguist, an archaeologist, an Alpine climber, a sportsman and had been Prime Warden of a City Company, the Ironmongers. During a quiet interval in 1916 he, with Colonel H. E. R. James, carried out excavations at Chatby, near Alexandria. They discovered hundreds of objects of the early Ptolemaic period and reported the findings in the *Bulletin de la Société d'Archéologie*. In the Alps he was fond of hunting chamois, a gregarious animal resembling the antelope. Of this sport he wrote in the *Alpine Journal* and in *British Sports and Sportsmen*. He often went on holiday with his friend Sir Robert Jones, who said of him: "He loved the Alps and more especially the peaks of the Austrian Tyrol in chase of chamoix. His experiences of such adventures were always brilliantly recorded. For many years we shared a shoot in Prussia in the midst of deer and wild boar and stayed with a mutual friend and landowner, Robert Tudor. Many a winter evening we spent in close intimacy by the fireside listening with delight to Alfred Tubby on the habits of animals and his experience of travel."

Tubby was the recipient of many honours. He was joint founder in 1901 of the Society for the Study of Disease in Children which later became a section of the Royal Society of Medicine. He was president of this section in 1912. He was also president of the Section of Diseases of Children at the Annual Meeting of the British Medical Association at Exeter in 1907 and of the Joint Section of Orthopaedics and Diseases of Children at Newcastle in 1921. In 1912 he was president of the Hunterian Society and as Orator took "The Surgery of Paralysis" as his subject. He was Corresponding Member of the American Orthopaedic Association and an honorary member of several French scientific societies. In 1915 he was

awarded the gold medal of the first class from Accademia Fisico-Chemica Italiana for distinction in Science and the Humanities. In 1924 he was elected a Fellow of the Society of Antiquaries. He returned from Egypt with two war decorations, one the Companion of the Bath and the other Companion of St Michael and St George. He died at Hastings on February 23, 1930.

He was about medium height, broad-shouldered and of distinguished appearance, his complexion slightly sallow, with pleasant blue-grey eyes that lent some attraction to his personality. He was an excellent conversationalist, his voice low-pitched and friendly. He married in 1890 Beatrice, the second daughter of William Payne of the Chamber of London. He had one daughter.

Alfred Tubby was old enough to be familiar with the traditions of pre-antiseptic surgery and young enough to embrace the teaching of Lister. He was therefore well placed to hand on a written account of what was of permanent value in the teaching of the early pioneers and yet well qualified to lead in the advance, under antiseptic precautions, of open operative correction of deformity. Furthermore he stood firm by the definition of orthopaedic surgery as the surgery of the entire locomotor system. By his incomparable text-book of 1912 he helped to raise the prestige of British Orthopaedic Surgery.

ARTHUR ROCYN JONES.

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