

Who's Who in Orthopedics

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Seyed Behrooz Mostofi

Who's Who in Orthopedics

Foreword by Professor Charles A. Rockwood, Jr.

With 267 illustrations



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This book
is dedicated to
my father, Dr. Seyed Reza Mostofi,
a gifted surgeon of exceptional merit, exemplary integrity and vision, and to
my mother, Mrs. Fakhri Mostofi,
whose amazing grace, enduring support and motivation are a great blessing.



FOREWORD

It is indeed a pleasure to prepare the foreword for this text, mainly because I am now a senior orthopedist who has known so many of the great orthopedists who are described in such great detail in this book. Some of the named physicians have been my very close personal friends, many have been my teachers, professors and colleagues. Indeed, these physicians through their contributions have made the field of orthopedic surgery what it is today worldwide.

This is a wonderful source of information on the interesting lives and contributions of the indi-

vidual surgeons. In addition, it can be read from front to back as a history of orthopedics. We are all indebted to S.B. Mostofi for this fascinating book. It is truly a text for everyone who has an interest in orthopedics, and surely should be read by orthopedic trainees, faculty members, and practicing orthopedists. I suggest it be placed in every library in medical institutions and hospitals.

Charles A. Rockwood, Jr., MD
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PREFACE

My obsession with history goes back a long way. Some years ago I began to focus my curiosity on individuals whose names are attached to orthopedics. It led to a long endeavor, which gave me enormous satisfaction and enjoyment.

Who's Who in Orthopedics gives an accurate account of people who were pioneers in the orthopedic world. Despite the search capabilities provided by technology today, turning the pages of old journals in specialized libraries remained an invaluable resource. The selection has been collected mainly from the British and American volumes of the *Journal of Bone and Joint Surgery* and *Clinical Orthopedics and Related Research*. The biographies have all been written by people who knew their subject well, so were able to write from personal knowledge. This is reflected in the text by their use of the personal pronoun. Most of the articles have been shortened with the intention of keeping the theme unchanged.

To keep the book readable and reasonable in size, I sadly had to cut down the number of entries. I have made my best attempt to cover the majority of pioneers in orthopedics. However, in any work of this nature, there are sins of omission. If you would like to suggest a personality for the next edition, please do so. It would be greatly appreciated and credit will be given if your suggestion is selected for publication.

The book gained from careful editorial by the contributors, to whom I am most grateful, but if there are any errors they are my responsibility and correction will gladly be made.

Seyed Behrooz Mostofi
London
May, 2004

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Robert ADAMS

1791–1875

Robert Adams was a member of the great school of surgeon pathologists, which flourished in Dublin in the nineteenth century and included Abraham Colles and Robert William Smith. Although he was a distinguished surgeon, Adams is remembered for his description of medical diseases; that is the Stokes–Adams syndrome, bradycardia and transient vertigo as a sign of fatty or fibrous myocarditis, and rheumatoid arthritis, which he defined as a specific disease separate from gout.

Adams was born and educated in Dublin. He began his medical training as an apprentice to William Hartigan and George Stewart, who were leading Dublin surgeons. After receiving a medical degree from the University of Dublin in 1832, Adams joined the staff of the important hospitals in Dublin where he became well known as a practitioner and teacher. He had a role in the formation of two proprietary medical schools in Dublin. He served as president of the Royal College of Surgeons in Ireland and the Dublin Pathological Society. At the age of 70 he became Regius Professor of Surgery in Dublin and surgeon to Queen Victoria.

In 1857, Adams published his most important contribution “A Treatise on Rheumatic Gout, or Chronic Rheumatic Arthritis of All of the Joints.” This was accompanied by a separate collection of illustrations of the pathologic anatomy of the disease. These publications established rheumatoid arthritis as a disease entity separate from

gout. With unlimited cadavers available, and no limits on the extent of their dissections, these surgeon pathologists produced some of the most interesting illustrations of gross pathology ever published.



Alfred Washington ADSON

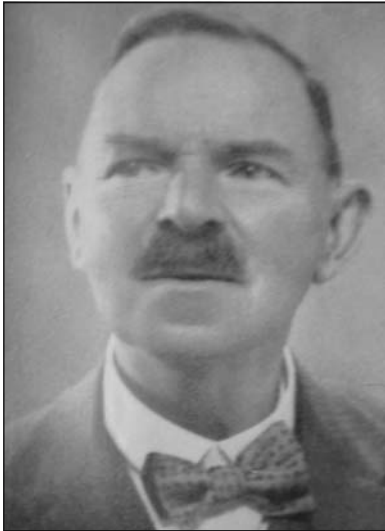
1887–1951

Alfred Washington Adson was born of Norwegian immigrant parents in a small town in Iowa. After graduating from the local high school, he attended the University of Nebraska before obtaining his degree of Doctor of Medicine from the University of Pennsylvania in 1914. He was a resident at the Mayo Clinic and joined the staff of the clinic in 1918. Initially appointed as a general surgeon, he developed the specialty of neurosurgery and was head of the Section of Neurosurgery of the Mayo Clinic from 1921 to 1946, when he retired.¹ Adson made many contributions to the development of neurosurgery and was considered to be one of the leaders in the field, especially in the area of surgery of the sympathetic nervous system.² Although cervical ribs and symptoms associated with their presence had been noted previously, Adson was the first to approach the area from the front and to emphasize the contribution of the scalenus anticus tendon to the syndrome. In an article,³ “Cervical Rib,” published in 1927, he describes the obliteration of the radial pulse on deep inspiration when the patient’s head is turned fully to the

affected side when the syndrome is present (Adson's sign). Twenty years later he published another paper on the subject, with a summary of his extensive experience.⁴ There is no doubt that this neurosurgical pioneer from the Midwest contributed immensely to the education of physicians of all kinds concerning the diagnosis and treatment of what is now called thoracic outlet syndrome.

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David McCrae AITKEN

1876–1954

McCrae Aitken was born in Singapore in 1876, the son of the Reverend William Aitken, and was educated at George Watson's College and Edinburgh University, where he graduated in arts and in 1901 in medicine; he proceeded to the Fellowship of the Royal College of Surgeons of

Edinburgh in 1904 and of England four years later. After holding house appointments in Edinburgh, he came south, but to a strangely different clinical climate, to which he did not easily adapt himself. Of this experience he wrote:

In 1902 I came to Liverpool and became house surgeon to Robert Jones. On the first out patient day there appeared a boy with a dreadfully swollen knee with numerous sinuses, and through my mind ran the thought: "Excision next week and probably amputation within the next three years." The boy, however, was merely fixed up in a Thomas's knee splint, in which he was allowed to walk, and sent home with instructions to report the following week. In a few months the outward appearance of that joint became normal, and a small range of painless movement returned.

At the Royal Southern Hospital he observed procedures in the treatment of fractures, joint disease and deformity that were certainly new and exciting, however unorthodox. But their very success convinced him of their soundness, indeed compelling him to become a most ardent advocate of the principles of Hugh Owen Thomas. When he left Liverpool, to pursue a higher qualification in Edinburgh and London, it caused him no little dismay to find that the calliper had no place in teaching hospitals in the treatment of a fracture or joint disease, although 30 years had passed since the splint and its uses were described by Owen Thomas in his first published monograph.

During his earlier years in London, Aitken held a house appointment at the Bolingbroke Hospital and eventually became Resident Medical Superintendent. His main interest, however, was in orthopedic surgery, to which he entirely committed himself on election as assistant surgeon to St. Vincent's Surgical Home for Cripples (afterwards St. Vincent's Orthopedic Hospital). This appointment brought him again in intimate contact with Robert Jones, who enjoyed a consulting practice in London as well as in Liverpool, and to whom he became private assistant. On the outbreak of the First World War, Sir Robert stepped into the leadership in organizing a nationwide provision for the reception and treatment of limb casualties by the establishment of military orthopedic hospitals; and he had with him no lieutenant better equipped than McCrae Aitken, who had very considerable experience of surgery and was thoroughly familiar with the use of the calliper and other Liverpool appliances in traumatic surgery. Aitken took an active part in

the operative treatment of military casualties at Shepherd's Bush, but he soon became preoccupied with the teaching and training of young surgeons drawn from the United States and the Commonwealth; and he often deputized for his chief at hospital inspections in different parts of the country. In 1916 he gave a lecture-demonstration before the Medical Society of London on "Orthopedic Methods in Military Surgery" in which he stressed the importance of conservative surgery and the value of rest as practiced by Hugh Owen Thomas, to whose principles he adhered without deviation.

After the war he continued at St. Vincent's, but he was also appointed visiting surgeon to the Shropshire Orthopedic Hospital, Oswestry (now the Robert Jones and Agnes Hunt Orthopedic Hospital), where he eventually succeeded Sir Robert as surgical director. During these post-war years he was very active in various scientific societies. He was well known for his patient study of scoliosis, extending over many years—a difficult field, often yielding little harvest in spite of laborious cultivation. But Aitken was recognized by his colleagues as the best informed upon this disability among them and one who succeeded in obtaining such correction that was often denied to others. In his sustained interest and study of spinal curvature he was the counterpart in the UK of R.W. Lovett of Boston. And as a contributor to the Robert Jones Birthday Volume of 1928 he wrote on "Curvature of the Spine." The following year he delivered his presidential address to the Orthopedic Section of the Royal Society of Medicine on "Respiratory Rhythm in Physiological Relation to Movement and Posture."

In 1931 Aitken delivered the fourth Hugh Owen Thomas Memorial Lecture; this honor he well deserved—there was no more faithful disciple of Thomas. He spoke on "Rest and Exercise in the Treatment of Joints," drawing on a wealth of clinical experience and radiographic illustration while paying due tribute throughout to the teaching of Owen Thomas. In 1938 he wrote a valuable monograph entitled "Hugh Owen Thomas, His Principles and Practice" (Oxford University Press). For this work Aitken had access to many private papers, photographs and case books, all of which have lately come into the possession of the British Orthopedic Association and are in the care of the Royal College of Surgeons. In his book Aitken contrived to give the essential teaching of Thomas with reproductions of all the splints, and those who fail to gain access

to the original writings will find this monograph a most helpful substitute.

Early in life Aitken suffered from a laryngeal malady, which left him with a permanent respiratory disability. Against this handicap he fought bravely, but at times it was distressing to see him embarrassed by paroxysms of coughing, which were beyond his control. His fresh and sturdy appearance belied what he undoubtedly suffered. This physical weakness prevented his participating at full stretch in practice and this, combined with an over-altruistic disposition, stayed the greater recognition that his great experience and ability deserved. His serene temperament and integrity were of the very substance of his being; he possessed a friendly disposition, loved the open air and was fond of sailing. He was a member of the Royal Thames Yacht Club and delighted to entertain his friends there.

With the passing of David McCrae Aitken at Mansergh, Kirkby Lonsdale, on July 9, 1954, there departed the last of that small group of pupils, consisting of Aitken, Naughton Dunn, Alwyn Smith and McMurray, whom Sir Robert Jones trained at Liverpool in the first dozen years of this century, each of whom achieved distinction in orthopedic surgery and contributed to its great advance. These were the men whom Sir Robert first gathered together for the initial staffing of the military orthopedic hospitals at Alder Hey and Shepherd's Bush in the First World War.



Fred Houdlette ALBEE

1876–1945

Dr. Fred Houdlette Albee was born in 1876, the eldest of seven children, on a farm in Alna, Maine. The Albees were of Anglo-Norman ancestry; the Houdlettes, his mother's family, were of a long line of French Huguenots. His maternal grandfather, for whom he had the greatest love and respect, taught him much about tree grafting. This grandparent was a carpenter, a cabinet maker and a master worker with precision tools. What Grandfather Houdlette taught young Fred about the principles of the grafting of fruit trees he learned well and applied later in the grafting of bone.

Dr. Albee was graduated from Bowdoin College, Maine, in 1899, and from the School of Medicine at Harvard in 1903. His first hospital appointment was at the Massachusetts General Hospital in Boston. It was in Waterbury, CT, where he first practiced, that his interest in orthopedic surgery was aroused. This was due largely to association with Dr. Charles Ogilvy, of New York City, who came to Waterbury for orthopedic clinics. In 1906 he moved to New York and became the radiologist and assistant in the dispensary at the Hospital for Ruptured and Crippled at 42nd Street and Lexington Avenue. At this hospital he came under the teaching of Dr. Virgil P. Gibney and Dr. Royal Whitman, the two most noted orthopedic surgeons in New York of that period. In 1906 he performed an arthrodesis of an osteoarthritic hip at the Postgraduate Hospital, a procedure that never before had been attempted.

It was bold surgery for those years. The operation was highly successful and resulted in his being invited in 1909 to give a report of the case before a meeting of the American Orthopedic Association. Later that same year he was asked to talk on the operative fusion of the hip joint before the International Association of Medicine and Surgery in Budapest—quite an honour for a young man only 6 years out of medical school. Undoubtedly, this trip abroad so early in his career was the means of expanding his horizons. Later he became one of the great international surgeons of his day, among his honors being the presidency of the International College of Surgeons in 1943.

He was a short, stocky, heavy-set person, similar in build to John Hunter, with somewhat the same fiery, dynamic personality. He was aggressive, individualistic, ambitious, impetuous and impulsive, always wanting to get things done right away. Some of his friends said that he was a law unto himself. He had tremendous physical stamina and ability, and performed hours of work far in excess of the average man. The day was never long enough for him. This ability was probably the no. 1 key to his success. Success usually was his in anything that he set out to do. Some called it "Albee luck," but long hours of hard work, determined energy and bulldog tenacity were more often the reasons. He had tremendous courage in tackling new ideas, especially in surgery, and always concentrated greatly on what he was doing.

In no sense could he be called a modest, humble man; as Mrs. Albee said, "He had no sweet humility." He was not shy, although it was said that, when he first started in medicine, he was timid and shy, particularly in talking. This is hard to believe when during most of his life, as one of his close friends wrote, "he was always preaching Albee and bone-graft surgery" and was "an automatic propagandist." Throughout his life he maintained his youthful enthusiasm. As Mrs. Albee has said, "He was a great man—little boy combination." Perhaps this youthful enthusiasm might be called the no. 2 key to his success.

With his friends he was always frank, cordial, kind and sincere, and usually extremely considerate of the feelings of others, but this was not always so; he had very few close friends among his contemporaries in orthopedic surgery. He did not have what some would call a superior mind. He was not a brilliant speaker; he had a characteristic colloquial style. In all his travels abroad—

and he crossed the Atlantic Ocean 38 times—he never learned to speak a foreign language. At the time of the organization in Paris of the International Society of Orthopedic Surgery and Traumatology (SICOT), of which he was one of the founders and vice president, one of his friends said that all languages were spoken, including that of Albee.

Some have said that Dr. Albee was his own worst enemy. He had his faults, and one of the worst was his love of seeing his name and picture in print, and with this love went an unusual ego. Some say it was an open and frank ego. One of his very close friends called it a “healthy egotism.” To many his ego was amusing and not upsetting; however, many became outraged and extremely disturbed in listening to him, especially when he would rise so frequently to discuss papers with little more to say than had already been said. Some who recognized and admired his abilities could not help but wonder why a man who had contributed so much should want always to be in the limelight. Respect could not help but be undermined. This, at times, made him very unpopular, and he lost many friends. One of his close friends abroad said that he learned to understand his simple but complex personality, and that he was more tolerant of his foibles than some of his contemporaries in the United States. Some thought he harmed himself greatly by his vanity in seeking honors; he acquired decorations from 16 different countries. He allowed what some said was plain advertising, as he had the habit of making the headlines.

Albee had little or no social life. According to a close associate, “His home was just another place to work—in no sense a ‘homey’ home.” Mrs. Albee liked to dance, but Dr. Albee apparently never danced. He said to her once that his right foot was a Methodist one and his left foot too heavy to move to music.

Although Albee may not have had dancing feet, he had dancing hands. With them he was a genius. He was an expert carpenter and mechanic of great ingenuity. With his electric saw he inaugurated a new era. Some called him the “world’s greatest bone carpenter.” His directness in his surgical approach and the dispatch with which he worked were always outstanding: 9 minutes for a spinal graft, 14 minutes for a tibial graft, in the easy cases when everything went right in the operating room.

Albee’s original work was a great contribution to medicine and a stimulus to surgery, but perhaps

an even more important contribution was what he did in stimulating the thinking and the action of others and in coordinating mechanical and physical principles. He was an inspiration to many, particularly to those who were closely associated with him and recognized his unusual abilities. One has said that his outstanding contribution was in creating solid principles of osteoplastic surgery and adhering to these principles. He spotlighted bone-graft surgery in a way that never had been done before. He lived in an era in which there was a gradual transformation of orthopedics from a specialty of conservative measures with few operations to one of many operations, orthopedic surgeons seeing surgery as a means of treatment. Treatment formerly would have consisted principally of rest, casts and braces—distinctly conservative.

In spite of his many personal weaknesses, Albee, with his friendly attitude and real love of people, acted often as ambassador of good will in foreign countries, particularly in Latin America, where he had many close friends. He set up Latin-American fellowships for study in the United States, and many young orthopedic surgeons from these countries studied under him. An operating room was named after him in Buenos Aires. In 1928 he organized the Pan-American Medical Association and became its first president. He was termed once, on one of his “flying” trips to South America, our “Ambassador in White.” On one such occasion, because of his bone-graft surgery, he was referred to as the “Burbank of Surgery,” which pleased him greatly.

In 1929, as President of the American Orthopedic Association, he helped to conduct in London the first joint meeting of the English-speaking orthopedic associations. Many who were not admirers felt that Albee, because of his aggressiveness and, sometimes, lack of diplomacy, would not be a good representative of United States; however, those who attended the meeting felt that he presided with dignity and modesty, and most were very proud of him.

There is no doubt that his extensive writing, lecturing and postgraduate teaching were important factors in making the medical profession as a whole aware of what could be accomplished by orthopedic surgery. These are some of the explanations of what made Fred “tick.” He ticked loud and long—over nearly four decades (1907–1945)—and there is no doubt that, because of this, very many things that he did—things that we are trained to do today—will endure, and

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orthopedic surgeons will be forever grateful to him. This is the man Albee.

Next, what were his contributions? He wrote 234 articles and five books under his own name and two with collaborators. Ninety-eight articles were on bone-graft surgery, 19 of which were on the use of the bone-peg graft for fractures of the hip, 16 on bacteriophages, 14 on arthroplasty, 12 on rehabilitation, 11 on World War I surgery, eight on the reconstruction of the hip, seven on myofascitis, and the remainder on miscellaneous subjects.

The following are some of his major professional accomplishments in the order in which the work was started.

In 1909 he did his original bone-graft operation for fusion of a tuberculous spine. This was reported at a meeting of the American Orthopedic Association on May 15, 1911 (but was not published until September 9, 1911). Just 13 days later, on May 28, Dr. Russell A. Hibbs, of the New York Orthopedic Hospital, published a description of another type of spinal fusion that has since borne his name. For years afterward, there was heated controversy over the priority of spine fusion.

In 1909 he developed an electric saw with special attachments for cutting bone. This was an adaptation of the Kenyon–Hartly saw. Albee showed how the power-driven machine tools of the mechanics' trade could be used in bone surgery as precision instruments, thus increasing tremendously the scope of orthopedics. With this system a new era of surgery commenced.

During 1912 Albee did many bone-graft experiments on dogs at Cornell University School of Medicine. He demonstrated to his own satisfaction that rigid cortical bone was much better for transplantation than cancellous bone. Today many think differently. He also showed that of all the types of transplants, the autogenous graft had the greatest measure of success.

In 1912 he published his first work on bone grafting in ununited fractures. It was in this type of surgery that his tools were most useful and his exactness superb; he would obtain "glass-stopper" fits and create self-sustaining grafts, almost unheard of before this time. During his career he devised bone-graft procedures for nearly every part of the human skeleton. In 1913, in London, at the International Congress of Medicine at the Royal National Orthopedic Hospital, he demonstrated his bone-grafting techniques with his motor-driven saw. In 1914, 4 months

prior to the start of World War I, he demonstrated again his bone-mill and bone-grafting techniques at the opening of the German Orthopedic Congress in Berlin.

In 1913 Albee designed a special fracture table that became a most useful addition to the armamentarium of the orthopedic surgeon. In 1936 the table was modified by the use of a central hydraulic hoist and became known as the Albee–Comper table.

In 1913 Albee performed his first extra-articular arthrodesis of the hip with the use of two rigid cortical grafts. Also in 1913 he first performed a bone-peg operation for ununited fracture of the hip. Later he reported 90% good results. This operation, it is said, was a great stimulus to hip surgery.

In April 1917, the United States entered World War I, and in July 1918, Albee, now a Colonel in the US Army, organized and became the surgeon-in-chief and director of an orthopedic hospital at Colonia, NJ. It was a model of its kind and the first reconstruction rehabilitation hospital this country had ever had. At the end of the war, Dr. Albee found that he personally had done approximately one half of all the bone-graft operations performed in the Army Medical Services, most of them at this hospital. It was here that he became more firmly convinced than ever before that in many ways it was more important to restore a patient to normal mental and spiritual health than to physical health, and that in so doing the patient must also be restored to his place in the economic structure of society. From this experience came Albee's deep and lasting interest in rehabilitation as we know it today. It was at Colonia that doctors were taught that their work was no longer confined to the sick room and the operating theatre, but that it was related closely to the economic scheme of things in the very fabric of society itself. In the field of so-called social orthopedics, as well as in rehabilitation, he was a pioneer. Because of his keen interest, the first state rehabilitation commission was established in New Jersey in 1919. Albee became its first chairman. He was reappointed by four governors and continued to be active with the Commission up to the time of his death.

In 1928 Albee first did his original arthroplasty of the knee. This was quite different from any other type that had been done before. It was a V-shaped fore-and-aft wedge. Albee felt strongly that, since one could not duplicate in the human knee the normal gliding mechanism of the

articular bone surfaces, a wedge type of arthroplasty that provided both mobility and stability was to be preferred. As an interposing membrane in arthroplasties, he always used the facial fat graft advocated by Murphy.

In 1929, following the work of his great friend, Dr. H. Winnett Orr, in Lincoln, NE, Albee became very much interested in osteomyelitis. He was convinced that the reason for the success of the closed plaster method of Orr in the infected compound fracture and the old osteomyelitic case was the spontaneous development within the host of a substance that thrived on virulent pathogenic bacteria and completely destroyed them. This substance, in 1921, had been called a "bacteriophage" by D'Herelle, of Yale. It was described as an ultramicroscopic parasite. Albee was able to show a phage appearing in 94% of 100 cases of acute and chronic osteomyelitis. His treatment was to clean the infected material out of the wound completely and then inject a bacteriophage solution into osteomyelitic wounds.

In 1933 Albee described a rather ingenious arthroplasty of the elbow in which, after he had reconstructed the joint, he lengthened the olecranon with its triceps attached—in some ways a comparable operation with his kinesiology lever operation of the hip that had first been described in 1919.

In 1934 he became greatly interested in low-back pain. Myofascitis, he said, was the principal cause. This he described as a low-grade inflammatory change in the muscles and the fascia, with the fascial insertions of the muscle to bone becoming hypersensitive because of toxic inflammatory or metabolic changes. Focal infection was found to be a factor in 52% of his cases. His treatment for this condition was, first, the removal of the foci of infection. He emphasized colonic irrigation and the introduction of *Bacillus acidophilus* by mouth or colonic implantation.

Such is part of the story of the life of Fred H. Albee, pioneer surgeon. Truly, he was an outstanding personality in the most progressive era of orthopedic surgery of all time. He once wrote, "I have never liked looking back." This, I am sure, he never did, for he was always looking forward; he could not have been the pioneer that he was and lived the full, active life that he did had he spent time in looking back.



Lewis ANDERSON

1930–1997

Lewis Anderson was born in Greensboro, Alabama, on October 13, 1930. He attended Emory University in Atlanta from 1947 through 1949 and received his MD degree from the University of Pennsylvania in Philadelphia in 1953. He married Stella Stickney Cobbs in 1951. After completing medical school, Dr. Anderson served as an intern at the Hospital of the University of Pennsylvania in 1953 and 1954 and then began a residency in general surgery at the same institution. His training was interrupted by 2 years of active duty in the United States Naval Medical Corps, during which he served as the senior medical officer on the submarine USS Orion. He subsequently completed his residency at the Hospital of the University of Pennsylvania. He received his orthopedic training at the Campbell Clinic in Memphis from 1957 through 1960. On completion of his training, he served as an instructor, as an assistant professor, as an associate professor, and, from 1971 to 1977, as Professor of Orthopedic Surgery at the University of Tennessee Center for Health Sciences in Memphis.

While at the University of Tennessee, Dr. Anderson began a series of studies that demonstrated that fractures healed well with rigid internal fixation with use of compression plates. Although the bones did not heal faster with these techniques, he noted that immobility of adjacent joints, joint stiffness, malreduction, and nonunion—all well-known complications of

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closed treatment of fractures—often were avoided and that the overall rate of morbidity and complications was greatly reduced with early motion, which could be used in conjunction with rigid internal fixation.

In 1967, Dr. Anderson was an American–Canadian Exchange Traveling Fellow, along with Dr. D.K. Clawson, Dr. Richard L. Cruess, Dr. G. Dean MacEwen, Dr. Charles A. Rockwood, Jr., and Dr. Antoni Trias.

Dr. Anderson, together with Dr. T. David Sisk, Dr. Robert E. Tooms, and Dr. William I. Park, III, reported on his pioneering work in a paper entitled “Compression-Plate Fixation in Acute Diaphyseal Fractures of the Radius and Ulna” published in the April 1975 issue of *The Journal of Bone and Joint Surgery*. Not only did this change in technology have a dramatic effect on the treatment of fractures of the forearm, it also paved the way for the general acceptance of many of the concepts of rigid internal fixation for other types of fractures. Dr. Anderson was asked to review all three editions of the *Manual of Internal Fixation*, by the AO Group, for *The Journal of Bone and Joint Surgery*; the reviews appeared in 1971, 1980 and 1992.

In 1977, Dr. Anderson became the first Professor and Chairman of the Department of Orthopedic Surgery at the University of South Alabama in Mobile. In 1989, he was named the Louise Lenoir Locke Distinguished Professor of Orthopedics. He served as President of the Board of Directors of the University of South Alabama Health Sciences Foundation from 1979 through 1982 and again in 1985, as Secretary–Treasurer of the Medical Staff of the University of South Alabama Medical Center in 1979, and as President of the Professional Medical Staff of the University of South Alabama from 1980 through 1982. In 1986, he was appointed Interim Dean of the University of South Alabama College of Medicine. He was named Vice President for Medical Affairs at that institution in 1987 and retained that position until 1992. After his retirement in 1993, Dr. Anderson was named Emeritus Professor of Orthopedic Surgery at the University of South Alabama. In 1996, he returned from retirement to serve as Interim Chairman of the Department of Orthopedic Surgery in order to provide continuity to the residency program that he had founded and that he loved.

Dr. Anderson was a Member of the Alabama Orthopedic Society, serving as its President in 1986 and 1987. He also belonged to the

American Academy of Orthopedic Surgeons, the American Orthopedic Association, the American Medical Association, the Southern Medical Association, Alpha Omega Alpha, and numerous other local and regional organizations. He was the author of more than 60 articles that were published in medical journals and of more than 20 sections and chapters that appeared in textbooks.

Despite having been plagued with severe ankylosing spondylitis for approximately the last 50 years of his life, he rarely complained and always demonstrated tremendous energy and good nature. He became a leader early in his career and was the model of a true “southern gentleman.”

Orthopedic surgery lost one of its true pioneers on October 18, 1997, when Lewis D. Anderson, MD, died at the age of 67 in Mobile, Alabama, after a brief illness. In addition to his wife, Dr. Anderson was survived by four children.



Nicolas ANDRY

1658–1742

The “Orthos Pais” or great seal of the American Orthopedic Association and the emblem of the crooked tree being straightened by a splint, used by the British in their Presidential Badge of Office for the American Presidents at the London meeting in 1953, are tributes to Nicolas Andry, who published the first book on orthopedic surgery, in 1741.¹

Other than these tributes, Andry has had too little recognition, either for his broad view or for

his conception of the details necessary for the proper care of the crippled child.^{2,3} Andry is so little known as a person that his name often is misspelled "André," the name of a later French surgeon who is distinguished for having "patented" some catheters and urethral bougies and for a text on diseases of the ureter. Andry was a historian (a characteristic of all sound innovators), a writer and an official high in the councils of the medical scholars in Paris.

Andry said of the title of his *L'orthopédie*:

As to the Title, I have formed it of two Greek Words, viz. Orthos, which signifies streight [sic], free from Deformity, and Pais, a Child. Out of these two Words I have compounded that of Orthopaedia, to express in one Term the Design I propose, which is to teach the different Methods of preventing and correction the Deformities of Children.⁴

In the English edition the spelling was changed from the French "orthopédie" to "orthopaedia," presumably to avoid the "pedis" (foot) connotation. In his very useful *Source Book of Orthopedics*, Bick spelled the name "André" and took the title from the English edition. However, Andry of course was presented correctly in every other way in Bick's text.⁵

Historical Survey

Andry's preoccupation with muscular contraction as a cause of deformity influenced nearly all of the French orthopedic specialists who followed him. In fact, one might suppose that the great John Hunter got some of his ideas, which he elaborated so well, from Andry's work, published when Hunter was 13 years old.⁶ Because of his special interest in the muscular system, Andry was led at once to the use of exercises and good posture in his prophylactic and curative expedients. In this way he undoubtedly influenced Venel, Delpech,⁷ Ling and perhaps Hunter;⁸ the extent of Andry's influence cannot be measured easily, but there are indirect evidences that it might have been considerable.

The great orthopedic biographer, Sir Arthur Keith, somewhat dismissed Andry and his *Orthopaedia* with the comment that Andry was the first to grasp to the full the role of the muscles as body moulders. However, he does say that "in M. Andry we meet the veritable founder of many of our modern orthopedic practices." Keith directed our attention to the tendency of Andry

and others of his time to attempt artificial "improvements" upon the human figure, as was being done with so many plants, trees and flowers. Thus, he credited Andry and his generation with many of the devices for shaping the features, the waist and much of the body, dyeing the nails and altering the eyebrows, the ears and the nose, the stock in trade of the "cosmetologists" ever since.

Andry was most observant, Keith said, of the defects in posture and gait, which lead to disability and deformity; although lacking information about anatomy and physiology, he was most intelligent in his conclusions about measures required for correction. Keith did not mention it, but there are similarities between these observations and conclusions by Andry and those of the celebrated Sir Arbuthnot Lane, whose application of surgery to the position and the movement of human parts probably has not been excelled.

Keith joined the critics of "rest" to the extent that he quoted Andry's argument for exercise as follows:

Asclepiades and Erasistratus have boldly condemned all forms of exercise as not only of no advantage, but even prejudicial to health, and recommended rest as the chief preserver of it; but they were very much mistaken in this point. Rest deserves its own share of praise; it is a restorer necessary in the course of a great many diseases.

Thus we see that the founder of orthopedics recognized that rest, as well as action, had its own particular therapeutic merit, but of the two, action was that to which he attached the higher value.⁹

In Garrison's excellent *History of Medicine* there are two references to "André," the first undoubtedly to Andry, for having introduced the word "orthopedic"; the second is for having been the first to describe infra-orbital neuralgia (1756).¹⁰ This latter reference by Garrison to "André" is obviously to Nicolas André (spelled correctly in this instance) and his work on "maladies de l'urètre" (1756). Garrison erred again, I think, in crediting Venel with the establishment of the orthopedic specialty because he founded the first institution for the treatment of deformities (1780).

Andry's earlier work on animal parasites, *De la génération des vers dans le corps de l'homme* (1700), showed extensive observation and much literary labor. However, it is interesting that some of the descriptions and the illustrations are remi-

niscient of Ambroise Paré's section on "monsters."^{11,12} One gets the impression that Andry accepted both text and illustrations from other authors for some of the "specimens," which he had not seen himself. A contemporary, Valisnieri, thought that Andry claimed to find worms at the bottom of every human disorder and gave Andry the nickname of "Vermicilosus," by which he was called for many years.

Caulfield (1928), in an interesting review of *A Full View of All Diseases of Children* (1742), dismissed Andry and his *Orthopaedia*, only giving him credit for the term "*orthopédie*." However, Caulfield was interested in the *De la génération des vers dans le corps de l'homme*, of which the English edition appeared in 1701. Caulfield reported that there was little originality in Andry's work on human parasites, with "many of the earlier paediatricians having contributed to this subject but after all, it wasn't a bad working basis for that time and forms a very necessary chapter to our little compilation."¹³ Caulfield was preoccupied with the apparently unknown author of *A Full View of All the Diseases of Children*, which had been attributed to John Martyn (1699–1768) by G.F. Still.¹⁴ It appears to me that Andry, situated as he was and with the book having appeared the year following his *L'orthopédie*, very well may have had a hand in it.

Andry pursued his studies first at the College des Grassins, with the intention of becoming an ecclesiastic. Later he studied medicine at Rheims and Paris and received his medical degree in 1697 at the age of 39. He became a professor in the College of France in 1701; a member of the Editorial Committee of the *Journal des Savans* and in 1724 became Dean of the Faculty of Medicine.^{15,16}

Andry made many contributions to the medical and the scientific literature of the period. Some of these, such as the one on animal parasites, were not received very well. He added to his unpopularity by leading the movement to require all written contributions on medicine, surgery and pharmacy to be submitted to the Faculty before publication. Also, he was among those who persuaded the Cardinal to issue the proclamation that, "desormais les Chirurgiens, au moment de faire quelque grande operation se feraient assister d'un docteur." This was duly announced in Andry's *Journal*.¹⁶

In the list of Andry's writings are papers on bleeding, purging, foods, the chemistry of certain medicines, an "unjust" critique of the work of

J.L. Petit on diseases of bones and, of course, his last work, *L'orthopédie* (1741). He published a second edition of his work on animal parasites in 1702, which was an attempt to reply to the numerous critics of his first one in 1700.

Dezeimeris, an extremely valuable bibliographic source (not mentioned by Garrison), gave some details about the time between Andry's qualification for the clergy and his beginnings in medicine.¹⁷ Andry got his degree as Master in Arts in 1685 and did not abandon the ecclesiastical robes until 1690. After obtaining his medical degree at Rheims, he was received by the Faculty in Paris. When this body was suppressed by Louis XIV, Andry presented himself to the new Faculty and was given his bachelor's degree the same year (1696).

Dezeimeris continued that in spite of doubtful motives and much controversy between Andry and the Medical Faculty, Morand, Garengot, Boudon and the other surgeons were required to submit to medical consultation before their surgical operations. Other surgeons not so well known, for whom this practice probably was particularly intended, are not mentioned.

Of more importance to us is the statement by Dezeimeris that *L'orthopédie* was Andry's most important work. Walter Stuck, in his very good article, was one of those who give Andry (spelled "André") a secondary place (as does Garrison) and accord Venel, with his "clinic," greater credit for the origin of orthopedic surgery as a specialty.¹⁸ As I have already indicated, I do not agree with this view. Andry's two volumes, *L'orthopédie*, provide a very complete foundation for most of the practices of orthopedic surgeons, especially the French, since 1741.

The author of Andry's biography in the earlier *Biographie Universelle* (1843), doubtlessly upon the authority of some of Andry's critics, wrote that with "un peu de merite et une grande talent d'intrigue" he obtained his various positions of importance and responsibility in the medical affairs of Paris.

However, any review of his life from his student days onward suggests that Andry lacked neither ideas nor courage, and his industry in numerous directions (making due allowance for the opposition he encountered) indicated a keen desire for knowledge and a disposition to be of service to his profession. These are fair qualifications for a medical man in any age.

This same biographer asserted that in suggesting that a surgeon always should have a medical

consultant for his major operative procedures, Andry simply was trying to dominate the whole Faculty himself. It might appear, from this distance in time, that Andry, having begun a specialty, saw, as we often have seen since, that supervision of surgical procedures being done by many kinds of surgeons had advantages that were not apparent or at least not acceptable to all of his contemporaries.

Andry's contributions to the *Journal des Savans* covered a period of 57 years, continuing to appear until 1759, 17 years after his death.

Comments and Observations

That Andry was entirely aware of the skeletal factor in some deformities is indicated by one of his earliest statements about curvature of the spine:

Crookedness of the Spine does not *always* proceed from a fault in the Spine itself, but is sometimes owing to Muscles of the fore part of the Body being too short, whereby the Spine is rendered crooked, just as a bow is made more crooked by tying its Cord tighter.

Andry had plenty of precedent for his use of bandages and splints for the prevention and the correction of deformity. Such excellent works as that of Guido Guidi (Vidius), published in Paris in 1544, provided him with illustrations from the surgery of Hippocrates, Galen and Oribasius.¹⁹ Many of these illustrations, so well done by Primaticcio, were primarily for wounds and fractures, but all of the fundamental ideas for the control of position, and even for immobilization, were inherent in these earlier publications.

Andry discussed club foot quite thoroughly in a short paragraph:

That Tendon which goes from the Calf of the leg to the Heel, is sometimes so short, that the Person is obliged to walk upon the fore part of his Foot, without being able to set the Heel to the Ground . . . Children are sometimes born with this Defect, and sometimes they come by it afterwards. In either Case it may be cured, provided this Shortness does not proceed from any violent Cause, which has absolutely maimed the Tendon, such as a Burning after Birth, for example, or any other Accident that is capable of rendering this Shortness incurable.

Under "parathesis" there is an apparent reference to a post-paralytic disability of the hand:

. . . (for it is only by this ["nervous"] fluid that they are able to contract) they are not sufficient to resist the Force of their Antagonist muscles, viz. the Flexors . . . In the first place, it must be observed, that the Deformity we talk of is commonly the effect of a bilious and convulsive Colic which has preceded it.

There are sections of Andry's book dealing with "bolt-feet, corrective shoes, bowlegs, congenital dislocations, including the hip, curvature of the spine, active and passive motion and defects."

Of supernumerary fingers, he said:

. . . the supernumerary one is commonly the Thumb. But whatever Finger it is, you ought to consider whether it is only Flesh, or Flesh and Bones like the rest. If it is only Flesh, it may easily be taken off, by the means of a Ligature of Silk tied about the Root of it. The Ligature must not be tight at first, but some days after it may be tied a little tighter, . . . and so proceed to straighten the Ligature by degrees, till at length the Finger withers and drops off of its own accord, without putting the Child to any considerable pain.

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Thomas ANNANDALE

1838–1908

Thomas Annandale, since October 1877, has filled the Chair of Clinical Surgery, which was for so long a time held by the greatest surgeon of the nineteenth century, James Syme. He was born early in 1838, in Newcastle-on-Tyne, where his father practiced for many years. He was educated at local schools and after an apprenticeship of two years in connection with the Newcastle Infirmary, he began his professional studies in the University of Edinburgh in 1856. His University career was not what is called an "all-round" one, for he early confined his attention to Surgery, which was to be the chosen line. He was soon distinguished among his fellow-dressers for his diligence, his constant work on the wards, his neat-handedness, and the zeal with which he collected, dissected, and preserved any morbid specimen he could procure, either in wards, operating theatre, or dissecting-room. He was soon known to the House-Surgeon as a safe man to have ready on the nights when on duty, and, still better, as a good man to take to private operations with the "Professor".

After graduating, and obtaining a gold medal for his graduation thesis and having taken the M.R.C.S., Dr.

Annandale acted for a short time as assistant to the late Dr. William Brown of Melrose (brother to the author of *Rab and His Friends*), and then in 1860 became House-Surgeon to Professor Syme. After filling his term of office with much zeal, he became one of the junior demonstrators of Anatomy in the University, and was appointed by Professor Syme as his private assistant. This event confirmed the young surgeon in his determination to be steadfast to Surgery. He then became a lecturer in the Extra-Mural School, first on Systematic and afterwards on Clinical Surgery. He was appointed Assistant-Surgeon to the Edinburgh Royal Infirmary, and in his turn became full Surgeon, which post he held when elected in 1877 to the Clinical Chair.

Professor Annandale has been a diligent writer on Surgical subjects, having in 1864 published his Jacksonian Prize Essay on the "Malformations, Diseases, and Injuries of the Fingers and Toes, and their Surgical Treatment." He has also published a work on "Surgical Appliances," and "Minor Operative Surgery," and in the current year he has written the article on "Diseases of the Breast" in *Ashurst's International Encyclopaedia of Surgery*.

So numerous were his minor papers, that between 1860 and 1877 no fewer than seventy-four separate contributions are recorded. Since 1877, and the responsible duties of a University Chair, only fifteen more can be discovered. Among so many, there must be great variety in value and importance, but all Professor Annandale's papers are practical in character, describing successful cases or modes of treatment, chiefly operative, indicating or originating advances in method. His style has all the simplicity of a personal narrative, though it cannot be said to reach the marvellous terseness and quaint Hebraic force of his great master. There is no doubt that the author has kept in step with surgical progress. As a teacher, he is thoroughly sound, and as an operator he is skilful, careful, quiet, and unobtrusive, without dash or show: the thing, however difficult, gets done in an excellent way.

When assistant to Professor Syme, he was as good an assistant as could be imagined—always ready, forgetting nothing, perfectly quiet, never discouraged, and never discouraging. To such qualities as these many serious and brilliant operations in the later days of his great master's life owed much of their success.

Professor Annandale takes little interest in medical politics, but he is a good citizen, and is always ready to lend a helping hand to a set of Health Lectures, or any other popular fancy of the time. Pleasant and courteous to all, he is an excellent example of success fairly earned by single-eyed devotion to one line of work and to one great teacher.¹

This biographic note by an unknown contemporary is quoted in full because it demonstrates that the criteria for success in academic surgery have not changed in over 100 years. Annandale

does not give any information regarding the type of anesthesia employed or the type of antiseptic/aseptic operative technique used for his arthro-tomy in 1883. A junior staff man during the period in which Lister was perfecting his sterile techniques at the Royal Infirmary, he was thoroughly familiar with Lister's methods. Indeed, it was the work of Lister that permitted Annandale to be an aggressive, innovative surgeon.

References

1. Quasi Cursores: Portraits of High Officers and Professors of the University of Edinburgh at H's tercentenary Festival. Edinburgh, University Press, 1884, pp 255–256



Alan Graham APLEY

1914–1996

Alan Apley was born in London, the youngest son of Polish parents; his father had served in the Russian Army. In South London, Alan, his two brothers and one sister all showed the intelligence and energy often seen in second-generation immigrants. His success at London County Council schools in Battersea and at the Regent Street Polytechnic led him to medical studies at University College Hospital in London. He qualified MB BS in 1938 and became a Fellow of the Royal College of Surgeons of England in 1941.

He then served during the Second World War as an Army medical officer in India.

Returning to London, he completed his orthopedic training and in 1947 was appointed as a consultant to the Rowley Bristow Orthopedic Hospital at Pyrford on the south-western outskirts of London. This was one of a number of tuberculosis hospitals, which had been developed into centres of orthopedic excellence. It had close links with St. Thomas' Hospital and with George Perkins, the inspirational Professor of Surgery. From him, Alan Apley absorbed an understanding of the pathology and the healing of orthopedic and traumatic lesions, which was to be the sheet anchor of his own clinical work.

His talent for teaching soon became apparent, and lectures at Pyrford developed into a special course for the Final FRCS, starting in 1948. This was then the basic selection examination for all branches of surgery. Would-be surgeons, especially those with little orthopedic experience, found the two long weekends at the Rowley Bristow an essential if somewhat frightening preparation for Finals. The orthopedic knowledge was so well organized that typed notes were requested, copied and passed around. These were seen by Ian Aird, the fiery Professor of Surgery at the Royal Postgraduate Hospital in Hammer-smith, who sent for the author and instructed him to turn them into a book.

The first edition appeared as an unillustrated softback in 1959, interleaved with blank pages for personal notes. It was an immediate success. When the publishers offered to print a limited number of pictures for the second edition, Alan Apley's typical response, involving much labor was to produce that number of composites, each containing a large number of postage-stamp, but perfectly adequate, images. Keeping this book up to date would have daunted many, but not until the sixth edition did he recruit Louis Solomon as coauthor. It is now in its seventh edition as *Apley's System* and a concise version is in its second edition. It is so popular throughout the world that pirated editions have appeared, which Alan found rather flattering. His latest work with Professor Solomon on clinical examination will now be published posthumously, although he saw an early copy before he died. Many other books had the very considerable benefit of his coauthorship, editing or other assistance.

The FRCS courses continued, becoming known as the "Apley" course. Their success led to requests for more, at home and overseas. He

always responded, using to advantage his wonderful collection of slides. He directed many courses at the Royal College of Surgeons of England and it was no surprise when in 1973 he was elected to its Council by a record vote. He enjoyed the administrative and intellectual challenges and was a vice president from 1983 to 1985, delighting in the ceremonial. He was appointed Director of Orthopedics at St. Thomas' Hospital in 1972, and was Honorary Treasurer of the British Orthopedic Association from 1972 to 1977 receiving the rare distinction of Honorary Fellowship in 1985, having delivered the Robert Jones lecture in 1978 and the Watson-Jones lecture in 1984, appropriately enough on "Surgeons and Writers."

Alan Apley became the editor of *The Journal of Bone and Joint Surgery* in 1984, at the age of 70 years, with undiminished energy and firm views on standards and presentation. He selected and rejected articles with great care; his letters to disappointed authors were all written by hand, in pencil, and revised before they were typed. They were always encouraging, never unkind; some authors, delighted with his response, discovered only at their second read that their work had not been accepted. His other great skill was the ability to edit a muddled or ugly sentence into clear prose. Under his kindly editorship, authors felt happy to submit their work; there was a steady increase in the number of submissions and the beginning of the now firmly international content of the *Journal*.

After retiring again, at 75 years of age, he increased his teaching and writing activities. In 1990, for example, he gave instructional courses or major lectures in 11 countries. When he became ill in autumn 1996, his aim was to be fit for a teaching visit to Australia planned for spring 1997.

He knew that he had unique gifts of expression and presentation, but rarely explained and never mentioned the hours of hard work, the patience and the dogged persistence that had produced such results. His insistence on the "drawer" method of writing papers and lectures was not theoretical; his own work was always put away for later review and polishing, many times. Pencil and paper were his tools; a lecture or a chapter of a book would undergo painstaking revision after revision. The "spontaneity" and the "readability," the clarity, the memorable phrases, and even the jokes, were carefully orchestrated and timed. Each lecture was reviewed after delivery,

improved, and rememorized for the next fortunate audience.

In all of these ways Alan Apley had a pivotal influence on the worldwide development of orthopedic surgery. In his patient manner he insisted, sometimes quite firmly, on the continuing value of many "old-fashioned" virtues: listening to the patient, careful clinical examination, and an understanding of the biological processes of disease and repair. Many of his interests, however, were wider. He skied and was an accomplished pianist, continuing to play in small chamber groups to the time of his last illness.

His final and richly deserved honor was the award of the Honorary Medal of the Royal College of Surgeons of England. This was established in 1802 for "liberal acts or distinguished labours, researches and discoveries eminently conducive to the improvement of natural knowledge and the healing art." It had not been awarded since 1989, and previous medallists include Sir Alexander Fleming, Frederick Wood Jones, Lord Webb Johnson, Lord Brock, and Sir Stanford Cade. In his own quiet way, Alan Apley fully deserved to be added to this distinguished list.

With the death of Alan Apley on 20 December 1996, the orthopedic world lost one of its best-known and best-loved teachers and writers. For over 50 years, in an unassuming and often self-effacing way, he used his skills in communication to help and to guide the expansion of orthopedic knowledge and practice. He maintained a clear view of the essentials, viewed each advance in the light of his experience, and always emphasized a hands-on, clinical and caring approach to patients. Throughout his life he engaged in distilling the important facts from the mass of new information and then presented them in clear and memorable words.

His eldest brother John, a distinguished pediatrician, died before him. A second brother, Martin, lives in London. His son Richard and his daughter Mary, from his first marriage to Janie, have both inherited his interest and skill in music. His second wife, Violet, brought great joy into his later years, supported him in his travels and cared for him with amazing optimism and energy during his final illness.

Alan Apley devoted most of his indefatigable energy to the teaching of postgraduate students and orthopedic surgeons worldwide. How fortu-

nate it was that he lived long enough to dedicate five full decades to this.

Alan's internationally famous "Pyrford Postgraduate Course," held twice each year, was attended by well over 5,000 orthopedic trainees and surgeons from the UK and countless other countries. It may be less well known that he organized and lectured at annual satellite courses for 18 years in New York and for 15 years in Toronto.

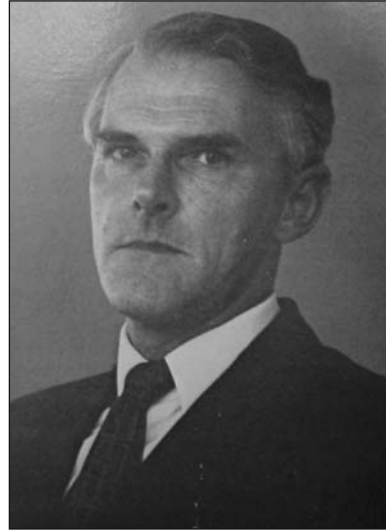
His lectures on orthopedics and fractures were superb. Having yearned to be an actor, he did have some theatrical training, and his presentations at home and abroad reflected this flair. His dramatic delivery gave clarity and impact, which was seasoned with a delightful sense of humor. Alan was also in great demand as an invited Visiting Professor. He served in this capacity in seven universities in the United States, four in Canada, four in Australia and 22 in other countries throughout the world.

He was equally effective with the written word. His internationally acclaimed textbooks have been used by hundreds of thousands of students and orthopedic surgeons worldwide. It is understandable that he became a legend in his own time, and is entirely appropriate that the sixth and seventh editions have been coauthored by Louis Solomon as *Apley's System of Orthopedics and Fractures*.

He has certainly been the finest, the most effective and the most respected teacher of orthopedics and fractures of this century. He has been *facile princeps*, easily the first, and his magnificent contributions as a teacher will live on through his inspiring books.

Alan Apley was an enthusiast. His exceptional ability with written and spoken words displayed a clear and well-ordered mind, which enabled him to reduce every problem to its essentials. Anyone who worked closely with him in any of his many distinguished roles soon became aware of these remarkable qualities. He could extract the essence from a paper or a discussion, pick out the salient points, and give a fair and unbiased opinion, usually in a crisp and amusing way.

He will also be remembered for his innate sense of humor, which made him a wonderful companion. On a lecture platform, in a council or a committee, in a large or a small group, at work or at play, it was always fun to be with him.



Christopher George ATTENBOROUGH

1922–1979

Born in 1922 into a medical family, Christopher Attenborough was first educated at Marlborough College and then went to Trinity College, Cambridge, followed by King's College Hospital, qualifying in 1944. He entered the Royal Navy after doing the necessary few months on the House, working under Dr. R.D. Lawrence, Mr. Jennings Marshall and Mr. H.L.C. Wood. He was soon posted to the East Indies fleet, where he served as a surgeon lieutenant in destroyers, including HMS Vigilant when it went into Singapore at the end of the war, and he was in the detachment that released the prisoners of war from Changi Prison. Later he served in a naval hospital for 6 months before returning to England in 1947, continuing his training at King's College Hospital under Sir Cecil Wakeley and others. A year at the Metropolitan Hospital as orthopedic registrar preceded his appointment in January 1952 as first assistant to the orthopedic and accident department of the London Hospital under Sir Reginald Watson-Jones and Sir Henry Osmond-Clarke.

When Christopher published an article it was an event. He never wrote "pot boilers" but confined his publications to important contributions to orthopedic knowledge. Thus in 1953 he published in *The Journal of Bone and Joint Surgery* a paper on the remodeling of supracondylar fractures of the humerus in childhood. In 1966 he

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described his operation for severe congenital talipes equinovarus, which still maintains a great influence on the treatment of that condition.

He was appointed orthopedic consultant to the Bromley Group of hospitals in 1956. His years in Bromley were extremely busy so that he was not able to get about to meetings, nor did he have much time for research. He took on a great burden of children with chronic diseases in particular, such as spina bifida and cerebral palsy. He attended the Cheyne Hospital and the Sydenham Children's Hospital. He had to build up the orthopedic department at Farnborough Hospital and was involved in the setting up of the Accident Service at Bromley. He was on his own in those days and his duties held him to his work.

About 1967, seeing his wife Sheila put up some net curtains on curtain springs, he decided to adapt springs to surgery and had them made in stainless steel. First they were used for lumbosacral fusion, for which, to those who use this method, there is no better way of achieving early mobility with sound fusion. Soon the springs became used for the stabilization of other conditions, such as the fractured olecranon, to give only one example.

In 1970 Christopher moved to Hastings and was at once at home, both clinically and mechanically. He made excellent use of the orthopedic workshop, wherein he designed his knee prosthesis in a remarkably short time. It was not only the knee that attracted his attention, for he was interested in replacement of other joints and his elbow prosthesis was under trial; he was working on finger, wrist and ankle prostheses up to the time of his death. He had evolved the very important concept of a stabilized and gliding joint replacement and was applying this to the other joints mentioned. It is a tragedy that many patients will be denied the better prostheses that his inventiveness would have undoubtedly produced in the future.

Christopher described his interests as being in orthopedics and family life. The former was divided into the surgery of arthritis, congenital deformities and cerebral palsy. It is not surprising, therefore, that in 1975 he was appointed Hunterian Professor and gave a most erudite and sensible appreciation of the problems of the arthritic knee and its prosthetic replacement followed by an elegant description of his own, equally elegant, technique of doing his now world-famous knee replacement. His other interests were based on his family and home. He

enjoyed drawing and gardening, he was captain of the bell ringers in his village church, and he took part in parish activities. Nevertheless, in the seclusion of his Sussex home he did many hours of painstaking research, notably into better designs of joint replacements and in modifying those already produced, because—being a perfectionist—he was never satisfied that he had achieved the final design.

Christopher's career written in terms of technical or orthopedic success is insufficient, because his real greatness was as a leader and a colleague. He was friends with everybody and inspired his colleagues and staff. He could get work done and, if he was displeased by its quality, he was prepared to say so. This criticism, always being just and fair, increased the respect of those concerned and made them more determined than ever to rectify matters and achieve the improvement demanded of them. In a very short time he had become internationally famous for his work on arthroplasty, particularly of the knee. He was in constant demand for lectures, both at home and overseas, and his company was sought after by all who knew him.

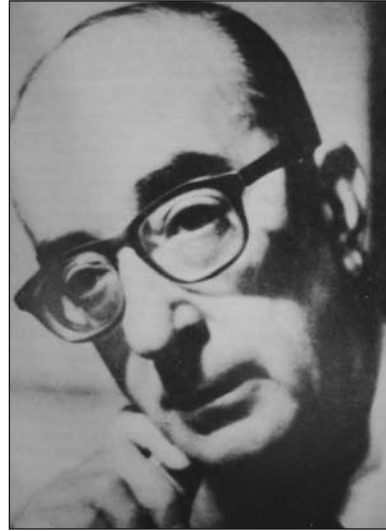
An example of courage is an edification to us all, and so when Christopher Attenborough died on June 13, 1979, at the age of 56 after a long illness, he left behind a great sense of achievement and an uplifting respect. At one stage of his illness he made a determined recovery; against all difficulties he returned to his clinical duties and to operating, including his total knee replacements. This epitomizes Christopher's life, because no problem or difficulty was too great to overcome; throughout his career he was a steadfast courageous surgeon on whom others could lean for advice, encouragement and strength.



Georg AXHAUSEN

1877–1960

Georg Axhausen graduated from the Military Medical Academy of Berlin, remained in the German army for some years and started his academic work in Kiel in 1904–1906. After several more years with the army, he returned to Berlin as instructor in the surgical division of the Zahn-ärztlichen Institute. He was one of the pioneers in studies of bone graft and necrosis. Necrotic bone was frequent in prechemotherapy days so that studies in noninfections, that is aseptic bone necrosis, were innovative. He was the first to use the word aseptic necrosis, or at least the first to appear in the mainstream of medical publications. Phemister's work on the same subject followed and recognized Axhausen's contribution, and Phemister's famous phrase "creeping replacement" is well described in Axhausen's work. In the 1950s the term avascular necrosis came to replace aseptic necrosis. The original paper covered 20 pages but contained much detailed criticism of contemporary work and theories irrelevant to today's readership and have been left out of this edited reprint.



José Luis BADO

1903–1977

Thinker, philosopher, doctor, surgeon, orthopedist, Bado placed a really brilliant mind at the service of his ideals. Nature generously endowed him with the divine gift of a powerful intelligence, which was strengthened and enriched by information acquired through study and meditation, through the capacity to think clearly, and through an incomparable gift of synthesis; the colossal knowledge he acquired was generously spread to others through his exciting, easy, elegant, brilliant, and persuasive oratory.

Bado was an inexhaustible source of encouragement to his pupils to study and meditate; these pupils are to be found not only in his native country, but all over Latin America. In transmitting his knowledge, he did not just teach the principles and goals of a medical discipline; he taught how to understand, how to analyse, and how to synthesize; he taught how to think, how to meditate, how to reflect. His pupils heard him say very often: "Observation is not enough; one must think; observation without thought is as dangerous as thought without observation."

He practiced the principles that he preached with complete devotion. He took note of the clinical facts pertaining to our field, meditated on his notes, interpreted them. He studied methods and techniques, trying to improve them and to use them under the strict control of basic concepts. He put forward original concepts, gathering around them groups of diseases, ostensibly unconnected with each other.

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His works and thoughts have been widely published in his country, in Latin America, North America, and Europe. His scientific training and his ideas are highly respected and considered in all the important trauma-orthopedic centers.

José Luis Bado was born in Montevideo, Uruguay, on July 8, 1903. He graduated first in his class from the Montevideo School of Medicine in 1928 and, after working in surgical clinics and teaching in anatomy theaters, he went to the Istituto Rizzoli in Bologna, Italy, the Mecca of the field at that time, where he spent two years specializing under Vittorio Putti.

Upon his return to Montevideo, he instituted specialization in orthopedics and traumatology, which had been considered a branch of general surgery. He then built the model Instituto Traumatológico de Montevideo, later called Instituto de Ortopedia y Traumatología. He created, organized, and gave technical and scientific personality to this magnificent institute, which he headed until his death.

Very demanding of himself and of those who worked with him, he turned the institute into one of the most efficient schools, to which young specialists have flocked from all Latin-American countries, including many from Brazil.

When the Chair of Orthopedics and Traumatology was created at the School of Medicine of Montevideo in 1951, he sat for the examination and became the first titular professor of the specialty in Uruguay. His unequalled skill as a teacher brought to the recently created Chair an exceptional brilliance: his wealth of information, his devoted and meditated clinical observation, his clear and logical thinking, his formidable power of synthesis, and his capacity to extract ideas were transmitted through magnificent, clear, simple, luminous speech—he was an orator of complete humanistic culture.

Professor Bado published 130 scientific papers and 12 books. Founder of the Sociedad de Ortopedia y Traumatología of Uruguay and of the Latin-American Society of Orthopedics and Traumatology, he belonged to all of the important cultural societies of the specialty.

His life, devoted to medicine, study, and meditation, played an important and noteworthy part in the development of Latin-American orthopedics. His writings are a bottomless source of inspiration to those who, like myself, had the immense privilege, as his pupil, to have him as an intimate friend.

One of his most brilliant pieces of writing, which touches on the teaching of the specialty and which was read in a speech in 1971, is quoted here:

Teaching presupposes the presence of two fundamental factors: the Professor and the Pupil. This latter must, essentially, wish to be a pupil in order to be able to reach the goal he has set himself, in a quasimystical attitude of reception, of devotion to the master, without slavery and without compromising his own personality, with the possibility of understanding and not of obeying, of admiring, of wanting, never of fearing or of being surprised.

It is also important that he who teaches should do so with pleasure; that is, do so as if he were giving the others something he generously wishes to transmit freely. An egotistical master cannot exist. To teach is to offer something acquired which is to be transmitted and if it is not thus, becomes uncomfortable within oneself and causes a sensation of private uneasiness, which only disappears when, offered to others, not as something to be obeyed by law, but interpreted and meditated as a thought.

Very frequently what we offer is of apparent simplicity and of little value; but hidden within there beats the germinating power of the seed which does not outwardly permit one to see its capacity of bearing generous fruit. One cannot guess the future of what one sows, only the permanence of the harvest. This is not a reward, it is a result; it does not attract us with its glory, we are rewarded by its reality and its hidden promise of new and consecutive harvests, the affirmation of the continuity of something which time will not destroy but which will recur, through unceasing and repeated consecutive flowerings.

These precise words carry us back with immense nostalgia to many summer nights in Montevideo when, sitting on the veranda of his hospitable home, we listened, for hours on end, to the voice of the master, of the thinker, of the philosopher, of the great orthopedic surgeon.

Professor José Luis Bado died in Montevideo, Uruguay, on December 19, 1977. José Luis Bado was, above all, a great master, great in his generosity and eagerness to spread the light of his exceptional spirit, of his incomparable intelligence, of his unique talent.

In favor of short, concise sentences and phrases, he lived his noble life in accordance with the inscription that hung in his study at the Instituto Traumatológico y Ortopédico de Montevideo, the place where he mostly taught. The inscription reads: "Work and meditate; work trains the hand, meditation kindles the spirit."