BIOGRAPHICAL MEMOIRS


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WILLIAM STEWART DUKE-ELDER

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By T. K. Lyle, Sir Stephen Miller and N. H. Ashton, F.R.S.

William Stewart Duke-Elder was born in Dundee, 5 miles south of his home, the Manse at Tealing, the second of three sons of the Rev. Neil Stewart Elder, Minister of the United Free Church of Scotland, and his wife Isabella, née Duke, the daughter of the Rev. John Duke, also a Minister of the United Free Church of Scotland at Campsie, Stirlingshire.

Stewart’s father—the son of John Elder, a merchant in Thurso, Caithness, and his wife, Anne Sutherland—was a scholarly man. Among the prizes he gained was a book given in the Annual Competition in the Town of Thurso, 1871, for ‘the greatest Proficiency in Highest Greek’. Perhaps with others it may have laid the foundation for Stewart’s own fluent, lucid style of writing.

There were no eminent scientific or literary forebears in the family, but he relished the thought of an ancestor hanged for sheep-stealing. The Elders are a sept of the Clan Mackintosh whose Coat of Arms bears the Cat o’ Mountain (the Wild Cat of Caithness) and their motto ‘Touch not the Cat bot (without) glove’. Duke-Elder’s own Arms bear the Caithness cats as supporters, and his motto ‘Concilii et labore’.

Early years and education

Stewart spent his childhood and boyhood at the Manse at Tealing—Kirkton of Tealing, a country parish nestling in the Sidlaw Hills as he affectionately recalled. It was a happy childhood with loving parents; there was very little money but many good times to remember, although he retained a somewhat wry recollection of the Scottish Sabbath of those days, with drawn blinds, the normal attendances at the kirk, and only The Bible and Foxe’s Book of Martyrs for reading matter. From his known escapades, this had little effect on his natural lively spirit, which he retained throughout his life.

He went to school at the Morgan Academy, Dundee. He and his two brothers drove by pony and trap the 5 miles to Dundee each morning in all weathers, taking with them money for lunch and a feed for the pony. Stewart was the driver and groom, exercising the pony in the holidays. It is not recorded that
he ate any of the pony's feed, but he did save on his lunch money to buy candles for reading at night. At the end of the session 1914–15 he gained the Gold Dux Medal and also gold medals for English, Greek, biology, and religious knowledge.

**University of St Andrews**

Stewart entered the University of St Andrews in 1915, having come top of the list in the Bursary Competition and being awarded the Foundation Bursary of £50, tenable for four years. In his first year he studied general Latin, general Greek, and general chemistry; in his second, general logic, general natural philosophy, and honours chemistry; in his third, honours chemistry, general physiology, and junior anatomy; and in his last year honours physiology, honours anatomy, and anthropology. In July 1919 he not only graduated M.A. with first class honours in natural science, but also B.Sc. with special distinction in physiology. He was a Demonstrator in Physiology in the 1918–19 session at St Andrews, and a Demonstrator of Anatomy in 1920–21 at University College, Dundee. He completed his medical course at the Royal Infirmary, Dundee, and the Royal Infirmary, Edinburgh, and graduated M.B., Ch.B., on 19 January, 1923.

Stewart was President of the Students Representative Council and President of the Students Union, 1921–22, when J. M. Barrie was the Lord Rector and gave his Rectorial Address on ‘Courage’. It was during this period that probably his first publication, ‘A varsity—its privileges and its duties’, appeared in the Students’ Bazaar Supplement of the Dundee Advertiser—the shape of things to come! The Bazaar, which ran for three consecutive days, included among its many attractions Dundee’s first ‘Thé Dansant’. Its purpose was to raise funds for the Sports Ground, achieving facilities for rugby, football, hockey, cricket, tennis and swimming. The cricket ground was immortalized by J. M. Barrie in his book ‘M’Connachie and J. M. B.’ in which he describes how he, the Lord Rector, bowled out Lord Haig, the Lord Chancellor. The bazaar was the brain-child of the Students’ Union, and Stewart was Convenor of the General Committee. Below is an extract from his article.

‘Just one person in a hundred understands what a University is really for. It is not to turn abroad clever fools, intellectual hermits, or studious recluses; but rather to rear men and women who can take an active and integral part, not in one but in every sphere of activity—not mere straws upon the current of life’s energies, but leaders of thought and leaders of action; and such are the products, not only of the seclusion of the study or class room, not only of intellectual traffic of University social activities, but also, and necessarily, of the camaraderie of the football field, the rough and tumble of the rugby pitch, and cock-tail kick of the atmosphere of the athletic ground.’
He enjoyed rugby, cricket (later becoming a member of the Middlesex County Cricket Club), rough-track motorcycle racing, and of course golf. In future years it always gave him pleasure to watch these sports on television.

**London**

After graduating in January 1923, Stewart decided to go to London. He set off with £5 in his pocket, stopping to do a locum for a general practitioner, Dr Arthur, in Wellingborough, Northants, en route. On 1 May 1923, he was appointed Resident Casualty Officer at St George’s Hospital for three months then Resident House Physician for six months, and anaesthetist during these periods. The Residents lived in a house next to the Hospital, affectionately known as ‘The Cottage’. He became Clinical Assistant in the Ophthalmic Department at St George’s in 1924, and in the same year passed the final examination for the Fellowship of the Royal College of Surgeons of England.

Duke-Elder had always been interested in physiology and in particular the physiology of the eye. He already knew the research work and writings of Sir John Parsons, F.R.S., Ophthalmic Surgeon at University College Hospital and at the Royal London Ophthalmic Hospital (Moorfields), and was fortunate enough to become his Clinical Assistant at Moorfields in 1924, which started a lifelong friendship. In consultation with Parsons and with his inspiration, he obtained in 1924 a part-time grant to work at the National Institute for Medical Research investigating the actions of radiations of different wavelengths on the various parts of the eye, with special attention to the possible action of natural radiant energy in the causation of cataract, and also for the study of treatment with ultraviolet light for certain eye conditions.

In 1926, all his research work was transferred to University College where he had the use of a laboratory next to that of the Professor of Physiology, Charles Lovatt-Evans, F.R.S., whose advice and help were always available. He also had the benefit of the guidance of the Foulerton Research Professor of Physiology, Sir Ernest Starling, F.R.S., who initiated him into the techniques of research, and of Sir William Bayliss, F.R.S., the previous Professor of General Physiology, and for biochemical problems Dr J. Drummond, the Head of the Department of Biochemistry. In addition he had advice from Sir Walter Fletcher, F.R.S., and Sir Edward Mellanby, F.R.S., successive Secretaries of the Medical Research Council.

It was during this period that he wrote a brilliant thesis entitled ‘Reaction of the eye to changes in the osmotic pressure of the blood’, for the degree of M.D. (St Andrews) (1925) which won him the Gold Medal, and in 1927 he graduated D.Sc. (St Andrews) with a Thesis on ‘The nature of the intraocular fluids and the pressure equilibrium in the eye’.

He was the Henry George Plummer Research Fellow in 1925, Sir Francis Laking Research Scholar from 1926–1929, Paul Philip Reitlinger Prizeman for 1926, B.M.A. Scholar in 1928, and Research Associate at University College in 1930.
Having been Clinical Assistant to the Ophthalmic Department at St George's Hospital since 1924, Duke-Elder was appointed Assistant Ophthalmic Surgeon in 1926 and five years later Ophthalmic Surgeon, becoming Consulting Ophthalmic Surgeon when he reached the age of retirement in 1963.

Duke-Elder's first appointment at Moorfields Eye Hospital was also in 1924, as Clinical Assistant to Sir John Parsons. In 1927 he became Medical Officer to the Ultraviolet Ray Department—the first of its kind in the country. This was of particular interest to him because it provided the clinical application—by general irradiation or local treatment in selected diseases of the eye—of his research on ultraviolet light. He was appointed Surgeon at Moorfields in 1928, but he retired from the hospital staff on medical advice in 1936, later to be appointed Consulting Ophthalmic Surgeon.

In 1926, when Clinical Assistant to Sir John Parsons at Moorfields, Stewart first met his future wife, Phyllis Mary Edgar, M.B., B.S., who came to work in the same clinic. She soon joined him in his research and helped with his publications. In 1928 one of the happiest things in his life occurred—his marriage to Phyllis. Their first home was at 59 Harley Street where they were able to enjoy and integrate fully their work together—at Moorfields, research at University College, in private practice and surgery, and in his writing, in which Phyllis helped with abstracts, translations, checking bibliographies, and proof-reading.

In 1930 Stewart was invited to give the Howe Lecture at Harvard University, and the Duke-Elders made their first visit to the U.S.A., which they both enjoyed immensely and where they formed many new and enduring friendships. Many of those who had not met Stewart before expected to meet a serious and elderly professor. How agreeably surprised they were to find an alert, smiling, modest young Scotsman with a twinkle in his eye.

Stewart and Phyllis soon needed more room than there was in 59 Harley Street where they had inherited two medical tenants and a secretary. The opportunity came to acquire no. 63—two doors away—which was demolished, and here they were able to plan a home specially suited to their requirements. They both loved and acquired books and in all their homes the living room was always the library while Stewart's consulting room or study contained his extensive medical library, so essential for his writing. At the same time he was beginning to build up a considerable private practice. Indeed, the well-known consultant physician, Lord Horder, referred his patient Ramsay MacDonald, the then Prime Minister, to Stewart who diagnosed glaucoma, and after joint consultations with Sir John Parsons and Sir William Lister, he carried out the necessary operations first on one eye and three months later on the second.

With hospital commitments, research and writing, Stewart had a very full life. He was one of those rare and fortunate people who could manage with little sleep. He would write into the small hours of the morning and after sleeping for the few remaining hours awake fresh and ready for an early start to an arduous day's work.
It was most unfortunate that in the summer of 1932 Phyllis became ill with pulmonary tuberculosis. The drugs now used so successfully for this were unknown at that time, so it meant periods in Switzerland and involved a thoracoplasty on one side. Gradually, however, she recovered and after three years was once more able to join Stewart in all his activities. It was then that they secured a country retreat, Armitage, Sunninghill, near Ascot, where they went each weekend. There, bringing essential books, he would write in uninterrupted peace at his desk in a bay of the library overlooking the garden. The house was let during World War II and sold afterwards.

In 1936 he was appointed Surgeon Oculist to King Edward VIII and subsequently to King George VI and then to the present Queen Elizabeth II until 1965, having held the Royal appointment for 29 consecutive years. None of his predecessors had ever held that office for so long a period.

**War Service**

In World War II he joined the R.A.M.C. as emergency Lieutenant, being rapidly promoted to Acting Colonel in 1940 and subsequently Consultant Ophthalmic Surgeon to the Army with the rank of Brigadier. In 1940 he obtained the Zachary Merton Convalescent Home at Banstead, Surrey, as an auxiliary hospital to the R.A.M.C. It was run jointly by the Red Cross and St John Ambulance, and Lady Duke-Elder was in overall charge. All patients with serious eye disease or injury who needed special investigation and/or convalescence and observation were sent there. Stewart’s army duties demonstrated among other things his flair for organization. They included matters of personnel, ophthalmic supply, circular orders, Medical Boards, committees and visits to overseas Army hospitals and units in all theatres of war. For his services he was awarded the Stars of Burma, Italy, France, and Germany. During the war he was of great help to the Medical Department of the U.S. Army, for which he was awarded the Bronze Star Medal. While he was engaged in wartime duties his private practice was looked after by Phyllis. When neither of them was available, patients were referred to Allen Goldsmith (later Sir Allen) who, after the war, had a consulting room in 63 Harley Street and worked closely with Stewart whom he predeceased in 1976, at which time Duke-Elder decided to retire from private practice.

**Contributions to ophthalmology**

In the course of his busy life, Duke-Elder made four important contributions to ophthalmology.

**Writings**

First and foremost were his many contributions to medical literature. The first book to be published was in 1927, at the age of 29—*Recent advances in*
ophthalmology, one of a new series of ‘Recent Advances’ published by Churchill. The book was an immediate success and shows clearly his line of thought, as we can read in the preface which illustrates his imagination and beauty of expression:

‘Its aim is to bring within a small compass and to present in a readily accessible form the research work which has been done in ophthalmology and its associated sciences. . . . For what is an Advance? It is easy to stand upon the banks of the stream, to throw a straw, now here, now there, into its current and watch how it is turned and twisted among the eddies; but it is difficult at times to be sure whether the straw is going forwards or really going back, or after all turning round and round.’

His preface finishes with an apt quotation:

‘Read not (said Bacon) to contradict and refute, not to believe or take for granted, nor to find talk and discourse, but to weigh and consider.’

In 1928 his second book was published— it is still not out of date— The practice of refraction. In 1930 he was approached by Henry Kimpton to write a textbook, and (2 years later) the first of the seven volumes of the Textbook of ophthalmology appeared, entitled The development, form and function of the visual apparatus. The final volume was published in 1954. This was a truly amazing work by a man who always wrote every word in long-hand, which became affectionately known throughout the world as the ophthalmologists’ Bible. It is written in his own inimitable flowing style, a harmonious use of words, none superfluous, and a profound knowledge of each subject, and expressed with a clarity that makes it easy to read and understand. Having finished the Textbook and realizing that some of it already needed revising, he decided to write a new—and as it turned out a much larger— edition, entitled System of ophthalmology. The first volume appeared in 1958 and the last, vol. XV, in 1976. For most of the volumes he enlisted the help of his colleagues, but there is no doubt that the inspiration, direction and the style of writing were entirely his. The publication of the 19 volumes (since four of them were divided into two parts) of this monumental work in 18 years was a mammoth task, especially when each volume consisted of about 1000 pages and had more than 800 illustrations, and each section contained an extensive bibliography. A very human feature of the book was to be found in the portraits and biographies of former masters of ophthalmology or explorers in branches of science who by their work aided ophthalmology.

The first volume, The eye in evolution, was entirely written by him. The Introduction starts:

‘We begin with a drop of viscid protoplasm the reactions of which we do not understand, and we end lost in the delicacy of the structure of the eye and the intricacies of the ten thousand million cells of the human brain. We begin with photosynthesis in a unicellular plant, or with a change in the viscosity produced by light in the outer layers of the amœba, and we end with the mystery of human perception. We begin some one or two thousand million years ago in the warm waters of the Archæozoic
era and we end with the speculations of tomorrow. And as we travel together tracing the responses of living things to light from the energy liberated by a simple photochemical reaction to the faculty of appreciating and interpreting complex perceptual patterns, neither in fact nor in fiction does a story more fascinating unfold.’

In the Preface of the final volume he recalled the postscript of the last volume of the Textbook:

‘And I shall be content if, as I wrote of the Textbook, the System has to some degree succeeded in its attempt “to integrate the facts of science rather than to record them, to be vigilant for knowledge but no less vigilant for the truth of that knowledge, to ease the transition from the groping past to the dissatisfied present and on to the uncertain future, and at the same time to preserve through the transition the essential continuity of all that is good by weaving it into a coherent philosophy”’.

He added:

‘I cannot deny that its completion brings me relief on the recovery of my freedom, but at the same time it has left some sadness for I have enjoyed writing it. As Edward Gibbon said on having written the last line of The decline and fall of the Roman Empire: “A sober melancholy was spread over my mind by the idea that I had taken everlasting leave of an old and agreeable companion.” And this feeling has been accentuated by the many expressions of thanks and appreciation from all over the world for the results of my endeavours. At the same time, the prayer of Sir Francis Drake on the eve of the attack on the Spanish Armada is apposite: “Give us to know that it is not the beginning but the continuing of the same until it is entirely finished which yieldeth the true glory.”’

When the last volume was published in 1976 he planned a revision and new edition in collaboration with two editors and appropriate authors, which unfortunately was not to be.

The speed and high quality of his output of medical books was phenomenal. It is true that he depended on fewer hours of sleep than most mortals and had the enviable aptitude of ‘dropping off’—not always at the most propitious moments, as Parsons would remind him of the occasion when he took him to the opera. But that is only part of the explanation of his amazing output of learned papers and books from 1924 until the outbreak of World War II in 1939, snatching any available time during it, and from 1945 onwards.

Stewart had a seemingly effortless power of concentration and he could turn from one subject to another as if there had been no interruption. His memory was remarkable, the facts or references, some many years distant, just seemed to surface—as if a key had been turned in a Pandora’s Box. In 1962 the Medical Society of London awarded him the Fothergillian Prize for the best contribution to the whole of British medical literature for the current decade. He had the ability to read a mass of scientific papers and reports and the genius to extract the essential facts and then to put them into an orderly and readable form. Altogether he published some 147 scientific articles and
papers and gave no less than 12 eponymous lectures. He was Chairman of the Editorial Board of the British Journal of Ophthalmology, and Founder and Editor of Ophthalmic Literature. In 1948 he collaborated with Sir John Parsons in the 11th edition of Diseases of the eye, a useful and complete book for students and general practitioners, and edited the next four editions.

Institute of Ophthalmology

The second and perhaps most enduring of Duke-Elder's achievements was his leading role in creating the Institute of Ophthalmology in London. To appreciate the great importance of this event in the scientific development of ophthalmology in this country—and indeed in the world—it is helpful to glance at the state of ophthalmology before and at the time of its establishment.

Six years after the founding in 1805 of the Ophthalmic Hospital, now known as Moorfields Eye Hospital, a school of ophthalmology was established there: it was the first of its kind in the English-speaking world and attained international recognition. During the second half of the last and the commence­ment of the present century, British ophthalmology emerged as a reputable medical speciality in its own right and gained a leading place in the world. In those days advances in ophthalmology depended to a great extent on the brilliance and dedication of pioneering individuals, such as Sir William Bow­man, F.R.S., and later Sir John Parsons, F.R.S., in the early twentieth cen­tury, but were perforce limited by lack of knowledge in technology and basic science. The directions of these advances were almost exclusively within the fields of clinical medicine and morbid anatomy, and were greatly accelerated by the invention of the ophthalmoscope in 1850, which made it possible to see inside the eye in v i v o, and by increasing refinement of the microscope and of microscopical techniques.

The position of ophthalmology as a medical specialty was eventually secured by the formation of a national professional society, namely, the Ophthalmo­logical Society of the United Kingdom. It was founded in 1880 and the first President was Sir William Bowman, the most illustrious British ophthalmo­logist of his day, famous for his exquisite anatomical studies first of muscle, then of the renal glomerulus and lastly of the eye. The early Transactions of the Ophthalmological Society of the United Kingdom, with their detailed clinical accounts and attendant pathological findings, witness to the purely clinico-pathological trends of progress in those early days.

Nevertheless dramatic advances were made on a broad front by the giants of that time and it was an important period in the evolution of clinical ophthal­mology, but scientific aspects were still largely unexplored and awaited the technological revolution in medical science of the early 20th century. Duke­Elder was the brilliant and dedicated pioneer in ophthalmology of our time. In 1924 he was carrying out research in the laboratories of the Medical Research Council at the National Institute for Medical Research in Hampstead, and in 1926 he became Director of a Research Unit for Physiology of the Eye.
(the first of its kind) within the Physiology Department of University College London, where he continued to work until the outbreak of World War II when the premises were no longer available and when he enlisted in the Royal Army Medical Corps. It was, however, a relatively small M.R.C. Unit, having no direct link with clinical ophthalmology and was somewhat isolated in a Physiological Department essentially concerned with cardiovascular, alimentary and neurophysiological research. Despite these limitations Duke-Elder during this period published some 70 scientific papers, many of major importance, dealing with a wide range of ocular physiological problems, including classical papers on changes in refraction in diabetes mellitus, the action of light upon the eye, the control of intra-ocular pressure, the circulation of intra-ocular fluids, with studies on the ocular circulation, the vitreous body, the aqueous humour, extra-ocular muscles and many clinical reports especially in relation to glaucoma which remained one of his life interests.

During the period between the two World Wars such great advances had been made in the basic science of medicine and in all branches of pathology that their relevance to ophthalmology could no longer be fully appreciated or adequately explored by a single person, much less by one already engaged in a demanding clinical practice. So it became apparent that if ophthalmology were to keep in step with the modern world it was essential to provide a centre with the latest laboratory facilities and to attract experts in the various disciplines. This was not only to keep the trainee ophthalmologist abreast of new knowledge, and to carry out research as a team on ocular problems, but the essential idea was that clinicians could understand the basic science of ophthalmology and that research scientists should be able to see the clinical relevance of their work.

No one realized this pressing need more acutely than Duke-Elder who at this time viewed ophthalmology from his vantage point as an established research scientist, and being already immersed in writing his great textbooks was consequently more aware of research trends than most of his contemporaries. He never lost sight of his ideal. He and Sir John Parsons made plans for the amalgamation of the Central London Ophthalmic Hospital with the Royal London Ophthalmic Hospital (Moorfields), combined with a special hospital and an Institute for research and teaching near University College and Hospital. This project was abandoned through lack of funds. It was, however, due to Duke-Elder’s inspiration and enthusiasm, backed by the authority of his international reputation, that the Institute of Ophthalmology, London, eventually came into being and was brought to its present flourishing maturity under his Directorship.

first two hospitals were retained for clinical work as two branches of Moorfields, while the Central London Ophthalmic Hospital was reconstructed to form the Institute, which was officially opened in November 1948 with Duke-Elder the Founder as Director of Research. Inaugural orations were given by Lord Rothes, Chairman of the Institute; Sir John Parsons representing British ophthalmology; Dr Alan Woods (Baltimore), representing American ophthalmology; and Professor H. J. M. Weve (Utrecht) representing European ophthalmology. The Institute, incorporated in the British Postgraduate Medical Federation, a School of the University of London, rapidly became world famous for the excellence of its research, both in basic and applied science.

When the Institute was opened many aspects of ophthalmology were represented; for instance there were Departments of Pathology, of Allergy, of Orthoptics and of Medical Illustration, with Units in Ophthalmological Research, in Vision Research, in Glaucoma and Myopia, with a comprehensive ophthalmological library. Mr Robert Davenport was the first Dean and his dedication and wise counsel contributed a great deal to the secure foundation of the Institute. Today the number of staff has increased threefold, that is to over 200, and the annual expenditure has escalated from an original £30,000 to well over £1,000,000.

This is not the place, however, to pursue further the detailed history of the Institute, but only its relevance to Duke-Elder. When he became Director he brought with him the experience of his personal laboratory research which had been largely concerned with the physiology of the eye, but his publications written in the beautiful flowing style for which he was so famous, were of such a high scientific quality and much in advance of contemporary studies in ophthalmology, that it is not surprising that he was able to guide, nurture, and develop the talent of all those, whether clinicians, or non-medical or medical scientists, who came under his influence. In line with his original policy he set up symposia between scientists and clinicians. Moreover, in collaboration with his staff he established a glaucoma research clinic and continued active research on the physiology of the eye, on trachoma, on the actions of cortisone and was, of course, involved in extensive historical and bibliographical research in the course of writing his *System of ophthalmology*.

No one, before or since—and perhaps never again—possessed or will possess such a wide comprehension of scientific disciplines, so that he was uniquely competent to appraise and direct research in almost every department. He was tireless in encouraging young research workers especially by emphasizing in glowing and almost exhilarating terms the potential value of their ideas, so that they left his presence with a Nobel prize in their pocket! Many a long evening he would spend checking their manuscripts—not least the English; and seeing him on his way home at the end of the day with his brief case stuffed with hopeful efforts—some of them now classics in ophthalmology—is an endearing memory. Always available to discuss a problem or fan an idea with anyone, he would wave them into his room with a smiling welcome as though he had nothing else to do and had, in fact, been waiting for that moment.

As an example of his effective Directorship in the early 1950s one may quote the ready and wholehearted support he gave to the Pathology Department (under its Director Dr Norman Ashton, later Professor Norman Ashton, F.R.S.) following the discovery of the action of oxygen on growing retinal vessels which finally solved the problem of the pathogenesis of retrolental fibroplasia. Duke-Elder, recognizing the importance of this work, made space available for a large-scale investigation, provided equipment and obtained grants to ensure its successful conclusion. Through him, Sir Harold Himsworth, F.R.S. (then Secretary of the Medical Research Council) and Sir Hans Krebs, F.R.S., both visited the Institute to discuss the work and the advice of Professor Frank Dickens, F.R.S., and Sir Charles Harington, F.R.S., was enlisted.

Duke-Elder himself described the manner of his directorship as a kind of dictatorship. There was some truth in this insight for his position was certainly more autocratic than would be acceptable today in this age of stultifying consensus decisions and multiple committees. He ruled with undisputed sway and ebullient glee, and everyone knew who was in charge, who to go to with their problems, and action—with or without casualties—was swift and sure.

It was largely his research and work at the Institute that won for Duke-Elder a distinction rarely conferred upon members of the medical profession who are primarily engaged in clinical work, namely the Fellowship of the Royal Society. When he retired in 1965 he was appointed Life President of the Institute and Emeritus Director of Research, and the Institute presented him with a portrait of himself by Edward Halliday, which hangs in the Boardroom.

The Institute is his memorial and his senior and junior staff have been aptly called ‘Duke-Elder berries’ and ‘Grand Duke-Elder berries’. He will long be remembered by ophthalmologists and many scientists and students from all over the world who visited the Institute during the 17 years of his Directorship, and are proud to have known him.

Faculty of Ophthalmologists

The third great contribution that Sir Stewart made to British ophthalmology was the inauguration in 1945 of a Faculty of Ophthalmologists with its headquarters at the Royal College of Surgeons of England in Lincolns Inn Fields. This was brought about by the amalgamation of the Council of British Ophthalmologists (founded in 1918 and composed of representatives from the Ophthalmological Society of the United Kingdom, the Section of Ophthalmology of the Royal Society of Medicine, and the Oxford Congress) and the Association of British Ophthalmologists (founded in 1938 with a membership open to all registered medical practitioners qualified to undertake ophthalmic work, and a Council elected by ballot from the members). The Faculty fulfilled the need for a single authoritative body with an extended function to represent ophthalmology and attain a profession firmly united to further its own interests and serve the good of the community.
Stewart was elected its first President, remaining in office for four years. During his presidency he arranged for the representation of one member of the Faculty on the Council of the Royal College of Surgeons, and also persuaded the College to initiate a special examination for a F.R.C.S. in Ophthalmology. It will be remembered that such an examination already existed but no one was allowed to take it until he or she had first passed the F.R.C.S. in general surgery, and only one man, F. A. Williamson Noble—and incidentally he passed with distinction—had ever taken the exam. Stewart was also one of the first examiners for the Ophthalmic Fellowship of the Royal College of Surgeons of England. The Faculty presented him with a portrait of himself by Ruskin Spear and a pair of handsome antique silver candlesticks.

The Hospital of St John in Jerusalem

The fourth great contribution that Duke-Elder made to ophthalmology started when in 1954 he was invited to succeed Lord Webb-Johnson as the Hospitaller of the Order of St John. The duties of the Hospitaller involved being in charge of the St John Ophthalmic Hospital in Jerusalem which at that time was situated in makeshift conditions in two adjoining houses in the Old City; the reason for this was that following the hostilities of 1947–48 its premises on the Bethlehem Road were in Israeli territory and could not be reached by the Arab population from the West Bank and elsewhere, whence the bulk of the patients came. Moreover, the building had been badly damaged in the fighting. Stewart realized the importance of the Hospital and was determined to replace the existing premises with a much better and thoroughly up-to-date building. He aroused the interest of many influential people, including the Rulers of several of the Gulf States, and contributions gradually flowed in with the result that by 1960 a splendid new and well-equipped St John Ophthalmic Hospital had been built in the beautiful white Bethlehem stone on the Nablus Road in East Jerusalem, which was officially opened by the Minister of Health of Jordan in the presence of the then Prior of the Order of St John, Lord Wakehurst. He also conceived the idea of inaugurating research work at the Hospital in order to try to isolate the organism causing trachoma, a very prevalent disease in the Middle East, and to find a method of prevention and cure. A trachoma research project had started in 1955 in a set of laboratories built in the grounds of the Hospital, in conjunction with the Medical Research Council and the Institute of Ophthalmology. For various reasons the work was transferred elsewhere, under the direction of Professor Barrie Jones of the Institute of Ophthalmology in London, an extensive research project which is still continuing.

The Hospital in Jerusalem has 80 beds, is staffed by a large number of Arabic nurses, British Sisters, and a British Matron, with ophthalmic Surgeons from Britain and various other countries, and treats more than 38 000 patients each year.
Sir Stewart's yearly visits to the Hospital with Lady Duke-Elder were great occasions when he always did a searching inspection of the entire building and saw numerous patients who needed his expert opinion.

**INTERNATIONAL OPHTHALMOLOGY**

Duke-Elder was elected President of the XVI International Congress of Ophthalmology held in London in 1950. The first Congress was held in 1857 and it is the oldest medical congress which survives today. Owing to World War II it was the first congress to be held for 9 years and was a formidable task of organisation since most suitable academic buildings in London had been damaged by the bombing. It was, however, a successful and happy occasion attended by nearly 2000 delegates. During the Congress he was elected President of the International Council of Ophthalmology, a position he held for 12 years after which he was made Honorary Life President. In 1958 at the request of the International Council he wrote a history of the activities of the Council during its first 100 years, entitled *A century of international ophthalmology* (1857–1957).

Duke-Elder was constantly in demand to travel overseas to give lectures, especially in the U.S.A., and had many medical friends all over the world. He was awarded no less than 16 medals in recognition of his work. They were:

- The British Association Medal in 1925
- The William Mackenzie Memorial Medal (Glasgow) in 1929
- The Nettleship Medal of the Ophthalmological Society of the U.K. for original research work in 1933
- The Howe Medal of the U.S.A. in 1946
- The Research Medal of the American Medical Association in 1947
- The Donders Medal of Holland in 1947
- The Doyne Medal of the Oxford Ophthalmological Congress in 1948
- The Gullstrand Medal of Sweden in 1952, and the Medal of Strasbourg University in 1952 (he was also Craig Prizeman in Belfast in 1952)
- The Gonin Medal (International) in 1954
- The Lister Medal in 1956
- The Bowman Medal of the Ophthalmological Society of the U.K. in 1957
- The Ophthalmiatreion Medal (Athens) in 1957
- The Proctor Medal of the U.S.A. in 1960
- The Fothergillian Medal of the Medical Society of London in 1962
- The Lang Medal of the Royal Society of Medicine in 1965

**PERSONALITY**

Duke-Elder was an ophthalmologist with a high reputation and in consequence his private practice became enormous. His patients admired him for his kindness and skill and the help he gave them, particularly when the outlook for their sight was poor. His opinion was regarded as the best that could
be obtained in the world, and patients were referred to him from every contin­
ent. After the 1939–45 war he was civilian consultant to the Army and the
R.A.F., ophthalmic adviser to the Ministries of Health, Supply and Labour,
and to the London Transport Board; he was honorary member of virtually all
the ophthalmological societies of the world and of many other scientific bodies.
Of all his honorary degrees the one that gave him the greatest pleasure was
the LL.D. of his old university, St Andrews, which he was awarded at a special
ceremony celebrating the 500th anniversary of St Salvator's College. He was
Stewart and Phyllis were well known for their hospitality and friendliness—
they entertained ophthalmologists and their wives from the British Isles and
from most countries overseas, first in their home at 63 Harley Street and later
at Tealing Cottage in St John's Wood.

Stewart was a friendly and warm-hearted person who was able to put
strangers rapidly at their ease by a welcoming smile and with a most enjoy­
able humour. He was a good listener and wise counsellor, always taking a
great interest in the personal problems of his colleagues especially those of
the younger generation. He was, however, invariably reserved and reticent
about himself and his achievements. He loved and enjoyed his work whether
it was writing his books or scientific papers, doing his own research or sorting
out the problems of others at the Institute, or seeing patients in his consulting
room, and always conducted his work in a relaxed and unhurried manner.
His discernment and sense of timing were quite amazing and based on a pro­
found knowledge of his subject. He was a man of extraordinary capability and
possessed the power of cheerfully overriding difficulties which to some people
would seem unsurmountable. He could often be noticed at committee meetings
sitting silently while others put forward arguments at some length, and then
quite suddenly and quietly he would sum up the situation with a few wise
remarks showing foresight and judgement and rendering further discussion
unnecessary. But perhaps he was at his best in ‘back-stage negotiations’ where,
over a friendly chat, he was adept at persuading people to come round to his
point of view. He was broad in his vision, ambitious in his projects and never
doubted that his plans were possible to complete. When delegating work or
responsibility to anyone he did not interfere but was always ready to give
advice. He was a man of complete integrity and loyalty.

He worked hard with a purposeful determination never grudging time and
never appearing to be hurried. He was decisive and rarely had need to adjust
his decisions. He could sum up people pretty accurately, which was useful when
selecting the right person for a job. He was cheerful and enthusiastic and could
carry others along with him and was never afraid of taking responsibility.

Stewart was essentially a bibliophile. On his retirement, when he had finished
the System, he read or re-read his collection of books, something he had always
promised himself ‘when he had the time’. It was his greatest relaxation.

Another relaxation which he enjoyed was the theatre. He preferred good
plays and musicals, some of which he would see more than once during their
run, and also light operas, particularly those of Gilbert and Sullivan, which he rarely missed during their season.

Stewart and Phyllis always enjoyed the company of their friends, and one of them, the late Sir Louis Gluckstein, G.B.E., Q.C., a neighbour for many years in St John's Wood, wrote:

'My wife and I exchanged visits with them whenever possible on alternate Sunday evenings for drinks and very enjoyable conversation. This association developed into a very warm and continuous friendship which endured throughout Stewart's life. We enjoyed a relationship and comradeship for which I was and am very grateful. Our minds seemed to move along similar channels. We both appreciated humour, of which Stewart had his full share, and in which he greatly enjoyed the latest stories. On such occasions his eyes produced that mischievous and endearing twinkle which showed how much he was enjoying either what he was saying or what was being said to him. Naturally with his long professional and other experience he had a fund of most interesting and remarkable reminiscences but he never allowed his professional activities, which during that period were obviously very heavy, to interfere with his capacity to keep in touch with contemporary matters, on many of which he was extremely well informed and on which he held very decided views. I think that he and I looked forward to our weekly meetings as being occasions for relaxation, entertainment and a true meeting of minds. He was indeed "A man for all seasons", lovable, shrewd, immensely well informed in innumerable matters and always without a spark of pomposity or self importance, a quality in my experience only to be found in the greatest men and women I have been privileged to know.'

Stewart always enjoyed good company and discussion with his colleagues, which was reciprocated, as Professor Allibone, F.R.S., one time Treasurer and Historian of the Royal Society Club which met and dined at the Athenæum writes:

'Sir Stewart was brought as a visitor to the Club for the first time just after his election into the Society. As a contribution to the after-dinner discussion he spoke of the evolution of the eye, but confessed that the function of the eye in the framework of evolution was far from clear. What is clear is that members had enjoyed his company for he was immediately proposed as a candidate for membership and was elected at the following Annual General Meeting in 1961.'

Professor Allibone was the Treasurer on duty on another evening when there was a discussion on the newly developed lasers which were beginning to play an important part in many aspects of pure and applied physics. Duke-Elder gave what was described as a very fine exposition on their application to the ocular problem of retinal detachment. He explained that a laser beam produced by a ruby crystal was focused onto the retina to seal it in place, in a comparable way to the established technique using light from a neon arc lamp. He described in some detail the action of the laser beam upon the
ocular tissues and the untoward damage which at that time had been found to occur in animals and was thought to be due to a shock-wave set up within the vitreous chamber. Duke-Elder emphasized that the operation was still in its experimental stage.

Professor Allibone recalls that the short account of the experimental use of the laser was a very exciting story for the A-side scientist such as himself, and adds ‘Sir Stewart was very popular with members, he always greeted colleagues with great friendliness and recalls with pleasure the evenings he had spent sitting near to him and enjoying a rich fund of anecdote and scientific discourse’.

In the last three years or so of his life Stewart’s activities were restricted through emphysema and breathlessness, but he looked forward to the visits of his friends to hear of their activities and talk about things of mutual interest.

Throughout his professional life Stewart was fortunate in having the love, support and help from a wonderful wife. She always took an important part in all his activities. She was an ideal hostess, never forgetting the names of newcomers or omitting to look after their special needs.

The photograph reproduced was taken by G. Argent in 1960.

Honours and Degrees
Bronze Star Medal U.S.A. (1946), Kt Commander Royal Order of the Phoenix, Greece (1965), Star of Jordan 1st Class (1966), Commander of Orthodox Crusaders, Order of Holy Sepulchre, Jerusalem (1967).
M.A. (1st Class Hons.) and B.Sc. (special distinction) St Andrews (1919), M.B. Ch.B. St Andrews (1923), Ph.D. London (1925), M.D. St Andrews (1925), D.Sc. St Andrews (1927).

Honorary degrees

Honorary fellowships

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