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Henry A. Miers.

SIR HENRY A. MIERS (1858-1942)

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Biographical notice of Sir Henry A. Miers (1858–1942).

With portrait (Plate III) and bibliography.

By L. J. Spencer, C.B.E., M.A., Sc.D., F.R.S.

WITH the death of Sir Henry Miers on December 10, 1942, at the ripe age of 84 years the Mineralogical Society has lost its senior member and its best friend. He was one of the few members of the select Crystallological Society, which was amalgamated with the Mineralogical Society in 1883. He had served on the Council of this Society almost continuously since 1888; as Vice-President in 1901–4, as President 1904–9 (longer than the usual period), Editor of the Journal 1891–1900, and Trustee for nearly thirty years 1911–40. Since retiring as editor in 1900 he had given generous and valuable help in reading all the proof sheets of the Journal until 1935, when owing to failing eyesight he was compelled to relinquish this activity. Finally, he bequeathed to the Society the sum of £200 free from duty and without any conditions. He was the last surviving member of the Crystallological Society, and was by eleven years the senior member of our Society.

Henry Alexander Miers was born on May 25, 1858, at Rio de Janeiro, where his father, Francis Charles Miers, was a civil engineer. His grandfather, John Miers, F.R.S. (1789–1879), also an engineer and distinguished as a botanist, had travelled widely in South America. His great-grandfather, Francis Place (1771–1854), was a radical reformer and one of the founders of University College, London. One of his two elder brothers, Edward John Miers, was a zoologist on the staff of the British Museum. Henry A. Miers was brought to England at the age of two, his father, then retired, settling in Eden Cottage, Beckenham, Kent. There his father died in 1907 at the age of 88, his mother in 1922 in her 97th year, and his eldest unmarried sister in 1942 in her 89th year—all of them even longer lived than H. A. Miers himself.

From a preparatory school in Oxford he gained in 1872 a classical King's scholarship at Eton. Here he was also interested in mathematics and science, and in 1876 he won the public schools gold medal of the Royal Geographical Society for physical geography. From Eton he passed in 1877 to Trinity College, Oxford, again with a classical scholarship, and took the B.A. degree in 1881 with a second class in mathematics, but he had had a very sound and well-balanced education. His intention then was to study physics, but with a forthcoming vacancy in the Mineral Department of the British Museum he turned to crystal-

lography and mineralogy, studying under N. Story-Maskelyne at Oxford, W. J. Lewis at Cambridge, and P. Groth at Strassburg.[1]

He entered the Museum in October 1882 as an assistant (first class) under L. (afterwards Sir Lazarus) Fletcher and remained until December 1895. I was fortunate in having his help and guidance during his last two years there. In 1888 he had a very lucky escape in a balloon accident, being picked up unconscious, while the other passenger was badly injured and the aeronaut Simmons was killed. British Museum assistants were afterwards forbidden to go up in balloons. His subsequent career was meteoric: Wayneflete Professor of Mineralogy at Oxford, 1895–1908; Principal of the University of London, 1908–15; Vice-Chancellor of the University of Manchester and Professor of Crystallography, 1915–26; Trustee of the British Museum, 1926–39; President of the Museums Association 1928–33; President of the Library Association, 1932; besides many other varied duties and appointments. He was elected a Fellow of the Royal Society in 1896 and knighted in 1912, honorary doctor of six universities (D.C.L., Oxford; 1934), and honorary member of several scientific societies, including the Russian and German Mineralogical Societies (he was also a life member of the French Mineralogical Society), and was awarded the Wollaston Medal of the Geological Society of London in 1934.

When he arrived at the Museum the removal from Bloomsbury to the new Natural History building at South Kensington had been completed and the collection was already in good order. He was put to work on the crystallographic catalogue of the collection, which had been started by N. Story-Maskelyne and was still in progress. Miers commenced this work with an examination of the sulphosalts, starting with tetrahedrite and tennantite, but neither of these minerals yielded new data for immediate publication. Soon afterwards he obtained interesting new results with meneghinite and bournonite, and he then began a detailed study of the isodimorphous group of the red-silver minerals—proustite, pyrargyrite, xanthoconite, and rittingerite—and a new species which he named sanguinite. His papers on these minerals contain elaborate discussions of the numerous crystal-forms and of the twinning. Another early piece of work was the labelling of the large collection of wooden models of crystals, on the faces of which the indices were very neatly painted. Amongst the many different minerals that were examined merohedral symmetry was detected on crystals of cuprite, stephanite, proustite, pyrargyrite, ullmannite, and spangolite. Minerals determined as new for the British Isles were monazite, danalite, and spangolite (and later at Oxford also hitchcockite). Monazite was identified in 1885 as minute crystals on an unlabelled specimen in the Museum collection, and he later succeeded in collecting exactly similar specimens during several visits to Tintagel in Cornwall. Another locality for monazite ('turnerite'), which had appeared in the text-books for many years as 'Mont Sorel, Dauphiné', he was able to show was based on the misreading of 'Mons. Soret' on a badly written label. His last paper on material in the British Museum collections was 'On some British pseudomorphs'.

In another direction he made a detailed study of precious stones, and compiled a manuscript catalogue of all the cut stones in the collection, recording their

[1] His first paper, published in German in 1882, was on crystals of cerussite and baryte in the Strassburg collections.

weights and checking their identity by specific gravity and refractive index determinations. Lectures on precious stones were delivered at the Imperial Institute (Nature, 1895), the Society of Arts (1896), and elsewhere. He was the first to record danburite from Mogok in Burma. Later he visited the diamond mines in South Africa, and he wrote the article 'Diamond' in the Encyclopaedia Britannica (1910 and 1929). He was the first president (1932–37) of the Gemmological Association. The obituary notice in 'The Times' (December 12, 1942) makes the rather ambiguous remark: 'While on the staff of the British Museum Miers had taken an interest in precious stones which he always retained.'

During this period in London Miers also acted, outside Museum hours, as instructor in crystallography in the chemical department under H. E. Armstrong of the City and Guilds College at South Kensington, where his most prominent pupil was W. J. (afterwards Sir William) Pope. There crystallographic data were determined for various organic compounds, including right- and left-handed crystals of optically active soberol as well as of the optically inactive pseudoracemic form. Three modifications of a student's goniometer were designed and constructed for use in the classes. A microscope-stage goniometer was also devised.[1]

His other activities during this period were many. In 1892 he visited museums in Scandinavia, Finland, Russia, and Germany, preparing an elaborate report with sketches of the arrangements in each collection, the manuscript of which is preserved in the library of the Mineral Department of the British Museum. From his study of Russian he drew up in 1890, in collaboration with J. W. Gregory and others, a system of Russian transliteration which is still in use for the Library Catalogue of the British Museum of Natural History. Detailed subject indexes of mineralogical and petrographical literature for each of the years 1883–88 were printed in this Magazine. (His interest in bibliography was later shown by his work on Royal Society committees in connexion with the International Catalogue of Scientific Literature, and he was responsible for the schedules of the subject classification in the mineralogy volumes for the years 1901–14.) He assisted in the completion of N. Story-Maskelyne's long-delayed book 'Morphology of crystals' (1895); and being a neat and skilful draughtsman he prepared many of the 440 figures in this book. The writing of his own well-known text-book 'Mineralogy' (1902) was also commenced, in which the description of the minerals and many of the 666 figures were based on material in the British Museum collection. A suggestion made to Sir William Ramsay in 1895 that the gas (which had been supposed to be nitrogen) from uraninite should be examined for argon led to the discovery of terrestrial helium.[2]

During his work on the red-silver minerals he had been impressed by the irregular variation in the interfacial angles measured on the crystals, and this led to his later important work on the growth of crystals. A new form of inverted goniometer was designed and constructed with the aid of a grant from the Royal Society (this instrument is now in the British Museum), and most of the work with it was done in his rooms in Davies Street near Grosvenor Square. With falling temperature in the small hours of the night he observed the successive changes in the position and

[1] Min. Mag., 1892, vol. 10, Proc. p. iv (title only). This instrument is described and figured in A. E. H. Tutton's 'Crystallography', 1922, vol. 2, pp. 1149, 1150, 1155.

[2] Nature, 1943, vol. 151, pp. 111, 199.

size of vicinal faces (low triakis-octahedra) replacing the true octahedral position on growing crystals of alum (reading poetry in the intervals of waiting). A preliminary account of this work was given to the British Association for the Advancement of Science in 1894, but publication of the full details was delayed until 1903 when further work had been done at Oxford.

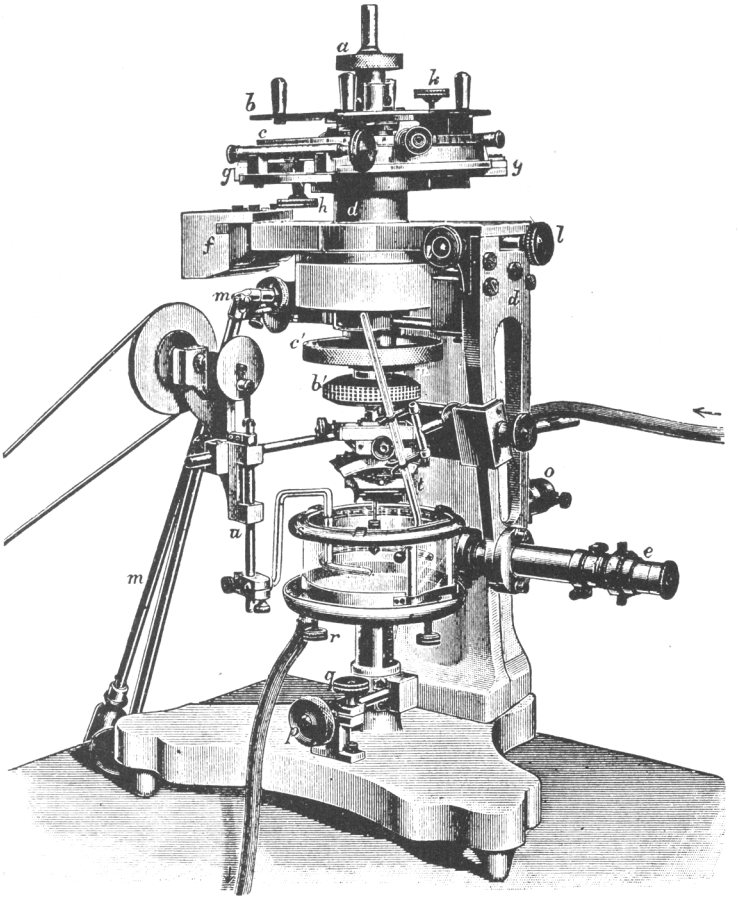

FIG. 1. Miers's inverted goniometer-refractometer with heating and stirring arrangements. (From A. E. H. Tutton's 'Crystallography', 1922, vol. 2, p. 1020.)

Immediately on leaving the British Museum he unfortunately had an attack of scarlet fever which delayed his work at Oxford, and his inaugural lecture was not delivered until 1896. His first work there was to organize a laboratory and put the mineral collection in the University Museum into order. The collection was thoroughly overhauled, registered, and labelled in detail. His earlier papers there were descriptive of material in the collection. Then he was able to turn to more intensive work on the growth of crystals. A new and more elaborate form of inverted goniometer (fig. 1) was constructed. Vicinal faces were studied on the

crystals of various substances besides the alums. By the method of total reflection the refractive index of the solution in contact with a growing crystal was determined, and hence the actual concentration of the solution. The metastable and labile states of supersaturated solutions were clearly defined, and the solubility and supersolubility curves determined for a number of substances. In the metastable state crystallization is brought about only by inoculation with a germ crystal of the same substance or of an isomorphous substance, while in the labile state there is a spontaneous shower of small crystals. In his presidential address to the Geological section of the British Association in South Africa Miers suggested that the porphyritic crystals in igneous rocks grew during the metastable stage, and the swarm of small crystals in the groundmass during the labile stage. In addition to his own papers listed under 'Growth of crystals' in the accompanying bibliography, 21 papers on this subject were published by his pupils at Oxford during the years 1906–10, the authors being T. V. Barker, W. H. Barrett, J. Chevalier, Sir Harold Hartley, G. A. Hutchinson, Miss Florence Isaac, B. M. Jones, and S. Kreutz.

During the Oxford period he was not able to devote his whole time to scientific work. There were other calls on his versatility and organizing ability, and he acted as Secretary to the Delegates of the University Museum, Delegate of the University Press and of the Examination Schools, Junior Dean of Arts, Member of the Hebdomadal Council, Trustee of the Oxford Appeal Fund, Bursar of Somerville College, &c. He was a Fellow and Vice-President of Magdalen College and Honorary Fellow of Trinity College.

During the second London period (1908–15) scientific work was completely in abeyance. As Principal of the University of London he had to keep the balance between the conflicting interests of the several constituent colleges on the internal side and the external examination system, and suggested improvements were held up by the war.

With his appointment as Vice-Chancellor of the University of Manchester a chair of crystallography was established and he was again able to return to teaching. Several papers were produced by his pupils H. E. Buckley and G. Greenwood, some of them dealing with the influence of impurities on the habit and growth of crystals. While in Manchester he was President of the Literary and Philosophical Society; Chairman of John Rylands Library, of the northern branch of the Library for the Blind, and of the University Settlement at Ancoats; also a Governor of the Grammar School, in addition to connexions with the College of Technology, the Workers' Educational Association, the College of Music, &c. In 1918 he was Chairman of the British Universities Mission on a visit to the United States; and was a member of the Royal Commission on Oxford and Cambridge Universities (1919–22), and of the Advisory Council of the Department of Scientific and Industrial Research (1919–26); and later (1929) Chairman of the Locust Control Committee of the Advisory Council.

On his retirement in 1926 at the age of 68 he settled in Hampstead, London, and was still overflowing with energy and enthusiasm. After administrative work at three universities he returned with vigour to his interest in museums. Elaborate reports were prepared for the Carnegie Trustees on the museums of the British Isles, Canada, West Indies, and British Africa, based on personal visits to almost every museum. He was a very popular President of the Museums

Association with an extended period of office, a member of the Royal Commission (1927–30) and of the Standing Commission (1931–39) on National Museums and Galleries, and a Trustee of the British Museum. He was also much interested in libraries, and was President of the Library Association (1932), a Trustee of the National Central Library, chairman of the Bodleian Library Commission (1930), and in 1930–31 chairman of a commission appointed by the Rockefeller Trustees to visit the more important libraries in Canada, the United States, Rome, and Paris.

In 'Who's Who' there is no record of Miers's recreations (apart from his work), but travelling was evidently his hobby. When at a loose end or when baffled by a problem he would just go for a ride in a railway train to nowhere in particular. Several journeys were made to Canada, the United States, and South Africa, and he had visited most parts of Europe. Although not in the first gold rush to Klondike, he was an early visitor. At the November meeting of this Society in 1901 he read a paper 'On the occurrence of gold in the Klondike: results of a visit in 1901'—perhaps not a very happily worded title. Accounts of this visit were published in a report to the Canadian Minister of the Interior and in a lecture to the Royal Institution in 1903.

Miers was a man of small stature with an almost boyish appearance and always a pleasant smile. He had a quiet and engaging manner and made many friends with no quarrels or enemies. He was modest and unassuming, and could easily adapt himself to circumstances, ready to fill in any gap—no pushing particle, but just an unobtrusive move into an unoccupied position as in a crystal lattice. He had an enormous capacity for work, with many irons in the fire at the same time. His method was to have a number of writing tables in different rooms each for a separate job, and when tired or stuck at one he would turn over to another. He was always much too busy to get married. By all who came in contact with him, whether as pupils or members of this Society, officially or in private life, he will be remembered not only as a sound and inspiring teacher and as an able administrator, but also for his unvarying kindness, his sympathetic appreciation of the difficulties of others, and his readiness to help. His name is commemorated to mineralogists (if such were needed) in the mineral miersite, an iodide of silver and copper.

Obituary notices of Sir Henry Miers have appeared in:

The Times, December 12, 1942. Sir Thomas H. Holland, Obituary Notices of Fellows of the Royal Society, 1943, vol. 4, pp. 369–375, with portrait, and bibliography by L. J. Spencer, pp. 376–380. S. F. M[arkham] and others, Museums Journ., 1943, vol. 42, pp. 272–273, 285–287. L. J. S[pencer], Proc. Geol. Assoc., 1943, vol. 54, p. 44; Quart. Journ. Geol. Soc., 1944, vol. 99 (for 1943), pp. lxxxvii–lxxxviii. G. F. H. Smith, Nature, 1943, vol. 151, p. 47. Gemmological News in Watchmaker, Jeweller & Silversmith, 1943, vol. 69, p. 28, with portrait. The Gemmologist, 1943, vol. 12, p. 24. Library Assoc. Rec., 1943, vol. 45, pp. 17–18. Sir Henry Dale, Proc. Roy. Soc., Ser. A, 1944, vol. 182, pp. 217–218; Ser. B, vol. 132, pp. 1–2. Sir Harold Hartley, Journ. Chem. Soc., 1944, pp. —.

Miers Memorial Fund

At its meeting on March 23, 1944, the Council of the Mineralogical Society, being anxious to recognize in a special manner the long services to the Society and to the science of mineralogy of Sir Henry Miers, decided to establish a fund in his memory, when the following rules were adopted.

RULES.

1. That the Fund be called the 'Miers Memorial Fund' and that in the first instance it be used for the provision of illustrations in the Society's publications.
2. That Sir Henry Miers's legacy of £200 be transferred thereto to form the nucleus of the capital of the Fund.
3. That Members of the Society be invited to contribute to the Fund.
4. That, unless a donor shall have expressed a wish to the contrary, all donations of or exceeding £20 shall be added to the capital of the Fund, but that any donation of less than £20, if not specifically earmarked by the donor for addition to the capital of the Fund or for the income thereof, may be added to the capital of the Fund or used for the provision of illustrations at the discretion of the Council.
5. That all illustrations published with the aid of the Fund shall be suitably acknowledged in the appropriate publication.
6. That, subject to the provisions of Rule 4, the regulations governing the use and administration of the Fund shall be the same as those set out in Bye-laws nos. 22, 24, and 25, except that no stock or security belonging to the capital of the Fund shall be sold, except for purposes of change of investment, unless such sale has been authorized by the Members of the Society at an Anniversary Meeting or at a Special General Meeting of the Society.
7. That no change shall be made in the Rules, unless authorized by the Members of the Society in the manner set out in Bye-law no. 34.

The accompanying portrait (Plate III), reproduced from a photograph taken in 1929 of Sir Henry Miers, is the first call on this fund for illustrations.

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