

Hatch, Frederick Henry, (1864-1932), geologist and mining engineer, was born 7 March 1864 at 7 Westbourne Park Place, Bayswater, London, eldest son in the London family of five sons and two daughters born ‘out of wedlock’¹ to Henry Hatch of Oxford, boot and shoe-maker and later draper, Liberal Councillor, and lessee of the Theatre Royal (Victoria Theatre), and his common-law wife Elizabeth Ann of Witney, Oxfordshire, daughter of a weaver, William Collier, and his wife Elizabeth. (In 1838, Henry Hatch had married Eliza, daughter of John Thomas Dobney, Superintendent Registrar of Births, Deaths and Marriages for the District of Oxford and his wife Ann; their family of four sons and two daughters were born 1840-47.)

Frederick Hatch is best known in this country as a petrologist (one who studies the systematic description of rocks, their origin and relationships), but is regarded in South Africa as a pioneer of the geology of the Witwatersrand goldfield.

Following private education in London and Paris, by 1879 he was studying General Science, both privately and at University College London, under the physicist George Foster (1835-1919) and the zoologist (Sir) Edwin Lankester [q.v.], and subsequently chemistry under Alexander Williamson [q.v.]. Passing the Intermediate Science Exam in 1883, he was second in the first division with Honours in Chemistry, and ‘obtained number of marks qualifying for Scholarship, Exhibition or prize.’² His subsequent claim to have ‘gained a gold medal and the Tuffnell scholarship for proficiency in analytical chemistry’³ appeared widely in contemporary biographical notices. However, according to University of London records, he was apparently not given such an award, nor does he appear to have taken a London degree.² Nevertheless, in 1883 he began study at the University of Bonn, taking mineralogy, geology and petrography under A. von Lasaulx (1839-86), chemistry under F. A. Kekulé (1829-96), geography, botany and philosophy; and

from April 1885 also worked as assistant to Lasaulx in the museum of the Institute of Mineralogy. He completed his dissertation *Ueber die Gesteine der Vulcan-Gruppe von Arequipa* (On the volcanic rocks of Arequipa [Peru]) in December 1885 and was awarded his PhD, with the predicate *magna cum laude*, in 1886.⁴

Returning to London, acknowledged as ‘undoubtedly the best trained of the younger petrologists in Britain,’⁵ he then joined the Geological Survey of Great Britain as a temporary assistant geologist (petrologist for England and Wales), undertaking studies of rocks from Britain and Ireland and assisting (Sir) Archibald Geikie [q.v.] and (Sir) Jethro Teall [q.v.]. Hatch translated K. H. F. Rosenbusch’s *Petrographical Tables* (1890) and published his own *Introduction to the Study of Petrology* (1891) and *Mineralogy* (1892), which greatly assisted the growth of petrology as a subject in Britain. He was also instructor in geology at the Royal Geographical Society and lectured aspiring explorers in the subject.

In 1891 he married Mary Elizabeth, eldest daughter of William Henry Randall, merchant, shipper and one-time US Consul in Madeira, and his wife Mary Ann de Villiers. She was an intrepid, high-spirited, lady of feminist views who felt that ‘a career in the civil service however distinguished did not offer the prospects commensurate with the talents she believed her good-looking husband possessed.’⁶ She accordingly persuaded him to resign from the Survey in 1892 and go to Johannesburg as a mining engineer. Joining the South African Trust and Finance Co., Hatch soon demonstrated that the apparently separate gold-bearing ‘reefs’ being worked in a number of the mines were all down-faulted parts of the same Main Reef leader, thus providing an important guide for future exploration.⁷

In 1893, he became assistant to the charismatic American mining engineer John Hays Hammond (1855-1936) who had recently joined B. I. Barnato’s [q.v.] De

Beers Consolidated Mines company. Early in 1894, Hammond was invited by Cecil Rhodes [q.v.] to become chief consulting engineer to Consolidated Gold Fields of South Africa, and Hatch moved with him.⁸ He subsequently accompanied Hammond and Rhodes on a two-month expedition to evaluate the gold-mining potential of Matabeleland and Mashonaland [now in Zimbabwe], during which they were joined by Dr. Leander Jameson (later Sir) [q.v.], one of Rhodes' closest associates.^{7, 9} By 1895, Rhodes was encouraging Jameson and Hammond (by then a ringleader of the Reform Movement) to engineer a general uprising against the Boers. Hatch wisely returned with his family to England that summer. The subsequent failure of the 'Jameson raid' on the fort at Johannesburg at the turn of the year 1896, resulted in the imprisonment by the Boers of Hammond and other leading Reformers, initially under sentence of death, before deportation to London.

After some months of work on copper mines in Huelva, Spain, Hatch returned to South Africa, but 'the difficulties of geological mapping in a sparsely-inhabited country where the inhabitants since the Jameson raid have not been particularly disposed to welcome the Uitlander, may be easily imagined.'¹⁰ Nevertheless, his geological map (1897), covering 8000 square miles of the Southern Transvaal, greatly assisted subsequent exploration for the Main Reef.¹¹ Alfred (later Viscount) Milner's [q.v.] arrival in the Cape, with the intention of forcing President Kruger to surrender to British suzerainty, rendered any hope of settlement with the Transvaal impossible and Hatch returned to England in October 1897. As a consultant, he subsequently studied gold, copper and nickel mines in Canada, Spain, India and Eritrea but returned to Johannesburg as a mining engineer with Messrs. Marks and Lewis following the end of the Boer War in 1902. His subsequent proof that gold-bearing reefs similar to those of the Central Rand were also present at depth in the

East Rand was another important aid to future gold exploration. He also served as president of the Geological Society of South Africa for 1905/6.¹²

Returning to England in March 1906, he again set up as a consultant mining engineer, travelling to the Orenburg goldfields in Siberia (1906) and undertaking a survey of the mines and mineral resources of Natal and Zululand, South Africa (1909). From 1910 to 1913 he was a member of Christ's College, Cambridge, and lectured in economic geology. He gave the James Forrest lecture to the Institution of Civil Engineers (1911)¹³ and was a member of the Advisory Board of the Royal School of Mines, London (1912-14).

WWI began shortly before he became president of the Institution of Mining and Metallurgy (IMM) for the 1914/15 session.¹⁴ As the War progressed, stocks of imported iron and manganese ores, vital to production of the steel used in munitions and ship-construction, became increasingly critical. Hatch was appointed to the Imperial Institute Advisory Committee on Mineral Resources in 1916 (a move which soured his relationship with the IMM, which was trying to establish and administer a new central department of minerals and metals)¹⁵ and in March 1917, he moved to the Iron and Steel Production Department of the Ministry of Munitions with responsibility for ensuring a sufficient home-production of ferrous ores. Following the Armistice, he was appointed Director of the Mineral Resources Development Branch of the Board of Trade (1919-20). He became a technical advisor to the Mines Department (1920-32) and was on the Governing Boards of the Imperial Mineral Resources Bureau (1919-25) and Imperial Institute (1927-32).

His publications include *The Gold Mines of the Rand* (with J.A. Chalmers, 1895); *The Geology of South Africa* (with G.S. Corstorphine, 1905); *An Introduction to the Study of Ore Deposits* (1929); and *The Textbook of Petrology. I. Igneous Rocks*

(1914; 8th edn. with A.K. Wells, 1926; 10th edn. with A.K. and M.K. Wells, 1949),
II. Sedimentary Rocks (with R.H. Rastall and T. Crook, 1913; 3rd edn, M. Black,
1928) which became standard university texts, in addition to over 100 scientific
papers and discussions.

In photographs Hatch strikes an imposing figure and always kept a moustache.
His contemporaries knew him as ‘a painstaking, studious, highly-cultured scientist’
who ‘always retained a scholar’s intellectual integrity and intolerance of sham,’⁶
as president of the IMM he had ‘by example, and by precept, cultivated the habit of
studiously short speeches.’¹⁶ Correspondence¹⁵ and anecdotal evidence¹⁷ suggests
that, at least in later life, he may have had a somewhat irascible nature. He was a
keen golfer and was a member of the Bath club and Athenaeum. He was awarded
the OBE in 1920, principally for his work on ore-supplies during WWI. The rare
sulphide mineral *hatchite* is named after him.

His wife accompanied him to the Transvaal and on fieldwork in the Indian
jungle. They had four sons, the two youngest of whom were killed in action in 1915
and 1916, and one daughter. Following his wife’s death from influenza in 1921, he
married Amie (daughter of William Henry Poole, and the divorced wife of Henry
Farquharson Kerr, President of the Kerr Steamship Company of Kingston, Jamaica¹⁸)
in 1923, but they appear to have lived apart in 1925-7 and finally separated in 1928.
Hatch died of broncopneumonia on 22 September 1932, at Albany, Piccadilly,
London, following an operation for an enlarged prostate, and was buried in Gap
Road Cemetery, Wimbledon, the next day, adjacent to his first wife’s grave.

¹ H. Hatch. Last Will and Testament, Oxford 24 August 1878.

² Dr. J.C. Walworth, London University Archives, pers. comm., June 1991.

³ F.H. Hatch, Vita, 5 March 1891. Archives of the Institution of Mining and Metallurgy, London

⁴ Dr. T. Becker, Arkiv der Rheinischen Fredrich-Wilhelms-Universität Bonn, pers. comm.,
December 1996.

⁵ Flett, J.S., 1937, *The First Hundred Years of the Geological Survey of Great Britain*. His Majesty’s

- Stationery Office, London [quote: p. 120].
- ⁶ Anonymous draft biographical note; Mrs. C.P. Hatch, pers. comm., 1997.
 - ⁷ Hatch, F.H., 1922. The Geology of the Far East Rand and the Heidelberg District, Southern Transvaal - A Retrospect. *Geological Magazine*, **59**: 249-256.
 - ⁸ J.H. Hammond, 1935. *The Autobiography of John Hays Hammond*, Farrar & Rinehart, New York.
 - ⁹ Chalmers, J.A.. and Hatch, F.H., 1895. Notes on the geology of Mashonaland and Matabeleland. *Geological Magazine*, new series, decade IV, **2**: 193-203.
 - ¹⁰ Hatch, F.H., 1898. A Geological Survey of the Witwatersrand and other Districts in the Southern Transvaal. *Quarterly Journal of the Geological Society, London*, **54**: 73-99 [quote: p. 73].
 - ¹¹ Hatch, F.H., 1897. A geological Sketch map of the Southern Transvaal. Edward Stanford, London.
 - ¹² Hatch, F.H., 1907. Presidential Address. *Proceedings of the Geological Society of South Africa for 1906*, **9**: xxi-xxxiv.
 - ¹³ Hatch, F.H., 1911. The Past, Present and Future of the Gold-mining Industry of the Witwatersrand, Transvaal. *Minutes of Proceedings of the Institution of Civil Engineers, London*. Session 1910-11. **186**: 378-405.
 - ¹⁴ Hatch, F.H., 1914. Presidential Address. *Transactions of the Institution of Mining and Metallurgy, London*. **23**: xli-lxvii.
 - ¹⁵ M.J. Jones, 1993. From the Archives, *Minerals Industry International* , July 1993, 34-50.
 - ¹⁶ Trewartha-James, W.H. 1915. Vote of thanks to Dr. Hatch. *Transactions of the Institution of Mining and Metallurgy, London*. **24**: xxviii-xxix, xxxiii-xxiv [quote: p. xxxiii].
 - ¹⁷ Mrs. C.P. Hatch, Mrs. J. McLachlan, pers. comms., 1997.
 - ¹⁸ Parish records, Montego Bay, Jamaica; Mrs. E. Calvocoressi, pers. comm., 1998.