its clouded grey sky, and its sea which leaps and falls again in waves of sparkling and of shadowed silver, is fit to rank among the triumphs of Scottish art.

**THOMSON, JOSEPH** (1858-1895), Scottish explorer in Africa, was born on the 14th of February 1858 at Penpont, Dumfries­shire, being the fifth son of William Thomson, originally a working stonemason, who had attained the position of a master builder. In 1868 his father removed to Gatelawbridge, where he rented a farm and a quarry. Joseph Thomson was soon attracted by the geological formation and historical associations of Nithsdale. For a short time he worked in his father’s quarry. In 1875 he went to Edinburgh University, where he paid particular attention to geology and botany, and after completing his course in 1878 he was appointed geologist and naturalist to the Royal Geo­graphical Society’s expedition to East Central Africa under Keith Johnston. The latter died at Behobcho, between the coast and the north end of Lake Nyasa, on the 28th of June 1879, and Thomson then took command. Though only twenty- one his coolness and tact were remarkable, and he successfully conducted the expedition across the desolate region of Uhehè and Ubena to the north end of Lake Nyasa, and then by a hitherto unexplored track to Lake Tanganyika, where he investigated the moot question of the Lukuga outlet. From Tanganyika he started to reach the Congo, but troubles with his carriers, who dreaded the warlike Warua, obliged him to retrace his steps. Going round the south end of Tanganyika he discovered Lake Rukwa, whence he marched via Tabora to the coast at Bagamoyo, reaching London in August 1880. In the following year he published an account of his travels under the title *To the Central African Lakes and Back.* About this time the sultan of Zanzibar, being anxious to develop certain supposed coal beds on the river Rovuma, was advised to obtain independent expert opinion as to their value. Application was made to Thomson, who undertook to survey them, and started from Mikindani, on the 17th of July 1881. The coal, however, turned out to be merely bituminous shale, and Thomson, on his return to Zanzibar, had to endure much delay and vexation through the sultan’s chagrin. For a considerable time the explorer had directed his attention to Masailand, a region of East Africa occupied by a powerful tribe of warriors who had a reputation for savagery and intractability somewhat greater than their actions warranted. Through their territory ran the shortest route from the sea to the headwaters of the Nile. In 1882 the Royal Geographical Society took up the question, and requested Thomson to report on the practicability of taking a caravan through the Masai country, which no European had yet been able to penetrate beyond Mt Kilimanjaro. By undaunted courage and great resourcefulness he succeeded in crossing the Njiri desert and exploring the eastern rift-valley. Thence he went with a picked company through Laikipia to Mt Kenya and Lake Baringo, afterwards traversing the unknown region lying between Baringo and Victoria Nyanza, reached on the 10th of December 1883. On his way back he visited Mt Elgon and discovered there a series of wonderful caves. The account of this adventurous journey appeared in 1884, under the title of *Through Masdiland,* and it is a classic in modern travel. The hardships and anxieties attendant on such a career began to tell upon Thomson’s exceptionally hardy constitution, but in 1885 he undertook an expedition to Sokoto for the National African (afterwards the Royal Niger) Company, and succeeded in obtaining the signatures of the sultans of Sokoto and Gando to treaties with which he had been entrusted by the company, treaties which did much to secure British interests in Nigeria. In 1888, by way of recreation, he travelled through southern Morocco and explored a portion of the Atlas range, and published the results in the following year, under the title *Travels in the Atlas and Southern Morocco.* In 1890 he entered the service of the British South Africa Company and in that and the following year, starting from Quilimane he traversed the region between lakes Nyasa and Bangweulu and the Zambezi. It was a period of great tension between the Portuguese and the British, and Thomson’s party on leaving the Portuguese frontier was fired on by the Portuguese who, too late, realized that they had allowed a treaty-making envoy to pass through their territory in the guise of a peaceful trader. Thomson concluded treaties with native potentates which gave to the Chartered Company political, trading and mining rights over a large part of the district since known as North-East Rhodesia. This journey, in which he covered nearly a thousand miles of hitherto unexplored country, proved disastrous to a constitution already undermined. In 1893 he visited South Africa in search of health, but unavailingly. He died in London on the 2nd of August 1895. The accounts of his travels not recorded in the books mentioned were published in magazines or in the *Proceedings of the Royal Geographical Society.* Thomson was the last, as he was one of the most successful, of the great geographical pioneers in Africa. He had an extraordinarily keen topographical instinct which enabled him to comprehend at a glance the natural features of the countries he traversed. To undaunted courage and promptness of decision he added a forbearing and patient disposition. “ Joseph. Thomson,” wrote Sir Clements Markham, “ had the high and glorious distinction of never having caused the death of a native. This is a proof of very rare qualities in the leader of an expedition, and places him in the very first rank of explorers.”

Besides the accounts of his own travels Thomson wrote, in collaboration with Miss E. Harris Smith, *Utu* (London, 1888), a novel based on his insight into the working of the African mind, *Mungo Park and the Niger* (London, 1890), a sound critical biography and many magazine articles on African politics.

See *Joseph Thomson, African Explorer* (London, 1896), a bio­graphy by his brother, the Rev. J. B. Thomson, which contains a list of the published writings of the explorer.

**THOMSON, THOMAS** (1773-1852), Scottish chemist, was born at Crieff, Perthshire, on the 12th of April 1773. He was educated at the universities of St Andrews and Edinburgh, and after taking the degree of M.D. at the latter place in 1799 established himself there as a teacher of chemistry. From 1796 to 1800 he was sub-editor of the *Encyclopaedia Britannica,* in succession to his elder brother, James Thomson (1768-1855), who filled that position in 1795-1796, and who in 1805 was ordained to the parish of Eccles, Berwickshire; and the chemical and mineralogical articles which he contributed to the supplement to the third edition formed the basis of his *System of Chemistry,* the first edition of which was published in 1802 and the seventh in 1831. At first this work was merely a compilation, but in the later editions many of his original results were incorporated; the third edition (1807) is noteworthy as containing the first detailed account of the atomic theory, communicated to him by John Dalton himself. In 1811 he left Edinburgh, and after a visit to Sweden went to London, where in 1813 he began to edit the *Annals of Philosophy,* á monthly scientific journal which in 1827 was merged in the *Philosophical Magazine.* In 1817 he became lecturer in chemistry at Glasgow University, and in the following year was appointed to the regius professor­ship. This chair he retained until his death, which happened on the 2nd of July 1852 at Kilmun, Argyleshire; but from 1841 he was assisted by his nephew and son-in-law Robert Dundas Thomson (1810-1864), who subsequently became medical officer of health for St Marylebone, London, and after 1846 he ceased active work altogether. He was a most energetic pro­fessor, and, according to his colleague, but no relation, Lord Kelvin (Sir William Thomson), founded the first chemical laboratory for students at a time when practical work was scarcely recognized as a necessary part of chemical education. He did much to spread a knowledge of Dalton’s atomic theory, and carried out many experiments in its support, but his strong predilections in favour of Prout’s hypothesis tended to vitiate his results, many of which were sharply criticized by J. J. Ber­zelius and other chemists. In addition to various textbooks he published a *History of Chemistry* (1830-1831) which has provided material for many chemical biographers, but which, although it reads very plausibly, cannot be regarded as an authority of unimpeachable accuracy. His eldest son, Thomas Thomson (1817-1878) graduated as M.D. at Glasgow in 1839, accompanied