GUIDE TO THE PUBLICATIONS OF THE ROYAL GEOGRAPHICAL SOCIETY 1830–1892

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Journal of the Royal Geographical Society 1831–1880
In 50 yearly volumes, containing papers communicated by travellers, by academic geographers, by Honorary Corresponding Members of the Society in all parts of the world, and with frequent use of information from the Foreign and Colonial Offices. Introduced by annual Presidential Addresses, and accompanied by information on the Society's administration, projects and Awards. Supplemented by miscellaneous notes, reviews and maps.

Proceedings of the Royal Geographical Society 1855–1878
Originally published in parts, then bound into volumes, one for each of the Society's sessions (October of one year to June of the next). Designed to give more immediate information on the Society's work and with details of each Meeting. Maps, letters and the progress of expeditions and their reports are included. The *Proceedings* and the *Journal* overlap, but there is important material in the *Proceedings* omitted from the *JRGS*.

Proceedings of the Royal Geographical Society (New Series) 1879–1892
After a two-year overlap with the *JRGS*, *Proc.* (NS) becomes the only periodical of the Society. Published monthly and bound into 14 yearly volumes, it includes all the material described above with additional items such as Geographical Notes, regular reviews, news from overseas Geographical Societies and a full account of the Geographical Section of the British Association for the Advancement of Science.

I. JOURNAL OF THE ROYAL GEOGRAPHICAL SOCIETY Vols. 1–10 (1831–1840)

THE *JRGS* was first published in 1831, a year after the founding of the Society, at a time of great acceleration in the progress of geographical discovery. The termination in 1815 of the wars against Napoleon had thrown open areas, particularly in the Middle East, hitherto barred to travellers, and had loosed on the world a number of energetic young men who had been in the Army, and some of whom were still employed. These were equipped by training to traverse and assess new country and their interest had been aroused by what they had seen of the lands where they had served. The generous leave periods allowed by the Army authorities, particularly from India, gave scope for quite ambitious journeys. The Navy comes into the picture also with the Hydrographic Department of the British Admiralty, a report of whose surveys was made regularly available to the RGS and summarized in the yearly Presidential Addresses. The origins of the Hydrographic Department go back to Captain James Cook, but its full effectiveness may be said to date from 1829 with the appointment as Hydrographer of Admiral Francis Beaufort, a founder of the Society. Naval officers figure largely in both *Journal* and *Proceedings*. Naturalists, too, were active, inspired by the spirit of scientific enquiry abroad at this time, and by the example of such famous travellers as Baron von Humboldt in South America in the early years of the century, and of Charles Darwin aboard the

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Beagle in the 1830s. The invention of railways and steamships encouraged the new enthusiasm for travel, and there was an increasing demand for maps and charts and for information about parts of the world now made more easily accessible. The RGS aimed in its publications both to stimulate and reflect this craze for travel, and to direct it into useful channels.

The *Journals* and *Proceedings* fall conveniently into decades, each 10 years of the *Journal* with its own cumulative index, and the *Proceedings* with an index for the full 22 volumes. With *JRGS* **8** (1838) the custom was begun of a yearly survey by the President at the Anniversary Meeting. The Address delivered on 21 May 1838 by W. R. Hamilton stressed the value of geography as an 'honourable, useful and highly meritorious pursuit', and ranged over travels in the Near and Middle East, South Africa, South America and Australia. Speaking in the following year (1839), Hamilton touched on the influence of steam navigation on discovery. G. B. Greenough succeeded Hamilton and in his first Address (1840) dwelt on the progress of Hydrographic Surveys by sea and Ordnance Surveys by land in the United Kingdom. He also drew attention to the publication of maps in France, Spain and elsewhere on the Continent.

These Presidential Addresses give a good idea of the chief spheres of geographical activity during the 1830s. The attention given to different regions naturally varied with the degree of opportunity and accessibility, and the most frequently visited were the countries of the Near and Middle East; there was also much going on in Persia and Afghanistan, and of course in India. Here British interests were most intensely concentrated, and here the East India Company was constantly advancing its sphere of influence northwards from the old trading areas in Bengal, Madras and Bombay towards the Punjab and beyond. The Near East, appealing to scholar and dilettante alike by reason of its Classical and Biblical associations, had been worked over to a certain extent by army officers in the war years, engaged against the French in Egypt. The further lands of Persia and Afghanistan, and the fringes of Arabia, came within the purview of the East India Company. Typical of the first category were Colonel F. R. Chesney whose design for a route to India along the Euphrates valley was the subject of notes in the *JRGS* 1834 and 1837, and the antiquary Colonel William Martin Leake, another founder of the RGS. Among the employees of the East India Company, Major (later Sir) Henry Rawlinson, of the Bengal Infantry, served in Persia from 1833 to 1839 and contributed important 'Notes' on his journeys in the Zagros Mountains (1839) and Persian Kurdistan (1840). Another traveller in Kurdistan was James Brant, British Consul in Erzerum (1836), and Viscount Pollington, disguised in Kinglake's *Eothen* as 'Methley', wrote an account of his adventures in *JRGS* 1840.

Important enlargements of knowledge were made, too, by the East India Company's naval officers, notably Lieutenant James Wellsted who recorded 'Observations on the coast of Arabia' (1836) and 'Narrative of a journey into the interior of Oman . . .' (1837). Other officers of the Indian Navy active in Middle Eastern waters were Lieutenant C. R. Cruttenden (1838) and Captain S. B. Haines (1839), while Lieutenant H. Blosse Lynch made a survey of the Tigris (1839). In India itself, the travels and reports of Lieutenant (later Sir) Alexander Burnes, of the Company's Political Department, are to be noted, on the river Indus (1833), on the North-west Frontier (1834) and in Sind (1837). Stimulated by the amount of information coming in from all these sources, the Council of the RGS launched its own expedition to Kurdistan in conjunction with the Society for the Propagation of Christian Knowledge (see *JRGS* 1839). It was

under the direction of William Ainsworth assisted by Christian Rassam, a native of Mosul. Ainsworth (1840) was to study the geography and antiquities; Rassam, the condition of Nestorian Christians. It was an ambitious and not very successful venture, and the expense nearly broke the infant Society.

In Africa, the search for the Nile sources, which was to dominate later issues of the *JRGS*, is foreshadowed in the abstract of journals kept by Ludwig Krapf and his colleague Isenberg of the Church Missionary Society while attempting to establish a station in Ethiopia (1840). Krapf was later a pioneer of the route to the Nile sources from the east coast of Africa. Interest in the continent was still largely concentrated on the west, an area inherited by the RGS when they absorbed the African Association in 1832. Vol. 1 (1831) contains extracts from the journal of John and Richard Lander who succeeded in establishing the course of the Niger by their daring voyage downstream to the mouth; Richard Lander was the first explorer to receive an award from the RGS. Captain William Allen and R. K. Oldfield contributed notes on the ascent of the Old Calabar river in 1836 (1837), and Allen wrote on the possible water system of Lake Chad (1838). The Society's own debut in Africa was an expedition led by Captain J. E. Alexander, not very productively, into South-west Africa (1838).

Perhaps the most rewarding of the Society's ventures in the 1830s was the sponsorship of Robert Schomburgk whose travels in Guyana earned him the Patron's Medal for 1839. Substantial coverage of journeys which, among other achievements, brought the *Victoria Regia* waterlily to Europe, are in the *JRGS* 1836, 1837 and 1840. There were also valuable additions to geographical knowledge made by the surveying voyages through Tierra del Fuego during 1825–36 by HMS *Adventure* and *Beagle*, under the command of Captains P. King, P. Stokes and R. Fitz-Roy (1836, 1837).

Australia was now on the brink of her great era of exploration and Charles Sturt had made his first great journey into the interior in 1827. Major T. L. (later Sir Thomas) Mitchell, Surveyor General of New South Wales, was himself an energetic explorer and contributed to *JRGS* 1837 an 'Account of the recent exploring expedition to the interior of Australia' which included a survey of earlier work.

There is little mention of the polar regions in this decade, largely because the Royal Navy, after a period of activity earlier in the century, had called a halt to Arctic exploration and to the search for the North-west Passage. There are, however, references to the Arctic Land Journey, led by Captain George Back in search of Sir John Ross, overdue on an earlier, privately sponsored voyage (1833, 1836). Foreshadowing the resumption of the North-west Passage quest, which was to take the form of the Franklin expedition and subsequent searches in the 1840s and 1850s, is 'Communications on a North-west Passage' by Sir John Barrow, another founder of the RGS and its President in 1836. The contribution of Hudson's Bay Company to the exploration of North America is typified in a paper by P. W. Dease and T. Simpson in 1840. The Antarctic is represented by 'Recent discoveries in the Antarctic' extracted from the log book of the brig *Tula*, commanded by John Biscoe, and made available to the Society's *Journal* by the owners, Messrs Enderby of Hull (1833).

II. JOURNAL OF THE ROYAL GEOGRAPHICAL SOCIETY
Vols. 11–20 (1841–1850)

THE SECOND DECADE of the *JRGS* saw well established the custom of printing in full the Presidential Address at the Society's Anniversary Meeting,

reviewing events and publications of geographical interest and including Admiralty Surveys and records of the Survey of India. In these Addresses may be found early mention of projects not yet ripe for discussion in the *Journal*, and during the 1840s the renewed search for the North-west Passage and the determined effort to ascertain the source of the Nile stand out.

At the earnest insistence of Sir John Barrow, Second Secretary to the Admiralty, Her Majesty's Government agreed, in 1844, to launch a new Arctic Expedition. In his Address for 1845, Sir Roderick Murchison referred to the departure of Sir John Franklin and Captain Crozier in the *Erebus* and *Terror*, famous Polar ships recently back from Captain James Clark Ross's Antarctic expedition. It was thought worth a mention that 'each ship is supplied with a small steam engine to work a screw, so as to ensure a progress of four or five knots'. A presage of disaster comes from President W. J. Hamilton in 1849, when he expresses 'regret now not unmingled with apprehension' that nothing more had been heard of the missing ships.

The 'Nile Quest' dominated geographical thinking throughout the middle years of the nineteenth century, and the Society's absorption in the problem emerges from Hamilton's address of 1849. Attention was still largely focused on the Blue Nile and other rivers rising in Ethiopia or Abyssinia, as it was then called, and on the attempts to arrive at the source of the White Nile by following the river upstream from the north. Hamilton refers to the researches of Dr. Charles Beke and the d'Abbadie brothers, but a new dimension is added by mention of reports from Ludwig Krapf, now stationed at Mombasa, and his colleague, J. Rebmann, of snow mountains on the Equator, to be reached from the east coast. These were, in fact, Mounts Kilimanjaro and Kenya, unconnected with the Nile, but their existence seemed to confirm the conjectures of the Greek geographer, Ptolemy, who located the river's source in the 'Mountains of the Moon', rising from twin lakes in central Africa. An approach to the Nile sources from the east coast now began to offer results, and the great expeditions of the following decade take off from Krapf's and Rebmann's reports, and from those of another Mombasa missionary, J. Erhardt, whose somewhat fanciful map of a great inland sea was to be published in 1855.

The main body of the *JRGS* for 1841–1850 shows a steady extension of geographical knowledge despite the Society's having had to restrict its activities as a result of over-ambitious ventures in the previous decade. There was much news from Australia. Within a few years of its inauspicious beginnings as a penal colony, Australia was attracting free immigrants, and by 1840 the south-east corner of the continent was pretty well settled, centering on the thriving State capitals of Adelaide, Melbourne, Sydney and Brisbane; a small free colony had also been established on the Swan river in Western Australia, its capital, Perth. The need for more living space, more pasture for the growing herds of the farmers, soon made itself felt. Exploration in Australia was therefore as much a matter of Government policy as of individual curiosity, though the two could well be combined as in the similarly inspired westward expansion in North America. T. L. Mitchell (1837) and Augustus Gregory (1848), Surveyors General respectively of New South Wales and of Queensland, were typical explorers. Sir George Grey (1845) had gained much experience leading an RGS expedition in northern Australia in the 1830s. He continued to travel, and to study aboriginal languages, after his appointment as Governor of South Australia. Edward John Eyre (1845, 1846) had a stake in the country of a different kind, being a sheep farmer with a particular interest in the overlanding

of herds. An exception was Ludwig Leichhardt (1846), the German scientist who explored the tropical north, and was lost on his attempt in 1848 to find an east-west route across Australia. Most important of all was Captain Charles Sturt (1844, 1847) who arrived in Australia in 1827 in charge of a band of convicts, and was appointed to the staff of Sir Ralph Darling, Governor of New South Wales. Sturt's fine exploration of the country west of the Great Dividing Range led to the unravelling of the geography of the Murray River system, and to the founding of South Australia. Appointed Commissioner for Lands for the new settlement in 1839, Sturt set himself to cross the continent from south to north. He was thwarted by the fearful desert conditions, and in his journeys penetrated no further north than the Tropic of Capricorn, somewhat beyond where Alice Springs stands today. His work was later completed by his companion, John M'Douall Stuart, who reached the Timor Sea in 1861. E. J. Eyre, also travelling north from Adelaide, is commemorated in Lake Eyre, the vast saltpan which fills with water only in the wettest years, but which it had been hoped would prove a great 'inland sea'. Thomas Brunner's exploration of the Middle Island of New Zealand (1850) earned him a Royal Premium Award of £25.

In the comparative sophistication of the Levant, A. H. ('Nineveh') Layard was examining 'Ancient sites among the Baktiyari Mountains' (1842) and studying ways of life in the Zagros (1846). The early and abiding interest of the British in Tibet is reflected in a short paper from the botanist Joseph Hooker, investigating the passes into the country and discovering 'interesting lichens' (1850); and in Dr. Thomas Thomson's description of a journey in the Karakoram while serving as the East India Company's Commissioner to Tibet (1849). The steady extension of the Survey of India's work was noted in yearly Presidential Addresses. In 1848, W. J. Hamilton announced the publication of 'two sections of the meridional arc of India . . . by Lieut-Col. Everest, late Surveyor-General of India . . . published by order of the Court of Directors of the East India Company', and referred to the continuing work in all parts of the country under Everest's successor Lieut-Col. A. S. Waugh. Over the years, British travellers and climbers were to develop a familiarity with the Himalaya based almost entirely on the pioneer work of the Survey in this corner of their huge area. Further afield, Captain S. B. Haines of the Indian Navy completed his survey of the south and east coasts of Arabia (part I, 1839; 1845) and Lieutenant Cruttenden of the same service busied himself with collecting information both geographical and ethnological from Somaliland (1848, 1849). The Finnish professor, G. A. Wallin, reported on Arabia (1850).

In Africa, Captain Allen (1843) and others, notably Captain Becroft (1841, 1844), continued to report on the west coast, where John Duncan made some interesting journeys in what is now Ghana (1845, 1846). Elsewhere in Africa the Society was becoming increasingly concerned with the Nile sources. Not only were the theories of practical travellers in Ethiopia, the d'Abbadie brothers (1848), Dr. Beke (1842, 1843, 1844, 1845, 1847, 1850) and the amusing and observant Mansfield Parkyns (1850), given ample space in the *JRGS*, there were also the 'armchair geographers' James MacQueen (1850) and W. Desborough Cooley (1842, 1845, 1846). Perhaps most significant, though as yet unconnected with the Nile Quest, was the appearance on the scene of David Livingstone (1850). As yet an obscure missionary, his journey across the Kalahari to Lake Ngami was not thought important enough to merit a Medal, but he received an award of £25 in 1849.

In North America, William Bollaert, a mining assayer, studied the geography

of Texas (1843, 1850) and in 1850 the Society's only Gold Medal for that year was presented to Colonel John Frémont of the United States Topographical Engineers for his exploration of the Rockies (Smyth, 1850). From the Royal Navy off the eastern coast of Central America came notes compiled by Captain Richard Owen and the officers of HMS *Thunder* and the schooner *Lark*; and from Captain Robert Fitz-Roy, 'Considerations of the Great Isthmus of Central America' (1850). South America is chiefly represented in three papers by R. H. Schomburgk (now Sir Robert) on travels in Guyana (1842, 1843, 1845).

Historical and geographical research find their place in the *JRGS* for these years in Cooley on the spice trade (1849) and Dr. Forchhammer on the topography of Troy (1842); in Charles Darwin on coral reefs (1842) and Augustus Petermann on the hydrography of the Jordan and of the principal rivers in the United Kingdom. The part women were to play in geography is foreshadowed by W. J. Hamilton's commendation in his Presidential Address for 1848 of Mrs. Somerville's *Physical Geography* (for which she was to receive the Patron's Medal 21 years later), and in an article by Miss Colthurst (1849) on the 'Comparative view of the various standards commonly used to express vertical distances'.

III. JOURNAL OF THE ROYAL GEOGRAPHICAL SOCIETY Vols. 21–30 (1851–1860)

PROCEEDINGS OF THE RGS Vols. 1–6 (1855–1861)

THE DECADE 1851–1860 was a prosperous one for the RGS under a series of energetic Presidents with a newly appointed paid secretary, Dr. Norton Shaw. 'We are afloat again!' declared Captain W. H. Smyth in his Address for 1851. In 1857 Sir Roderick Murchison mentioned the need for larger premises, and in 1860 Lord de Grey and Ripon announced a five-fold increase in income and a trebling of membership. The climate was propitious. The Victorian enthusiasm for science included a keen interest in the new technology which had provided gas and electricity, railways and steamships; the RGS became, and long remained, a pre-eminent source of information on the nature of the physical world, and on the means of getting about it. There was romance too in the increasing ease with which men could communicate with and visit each other, and the Presidential Addresses abound in references to trans-ocean cable routes, to canals and railways across Central America, to railways over the Rockies (Smyth, 1851; Ellesmere, 1854, 1855; Beechey, 1856). In 1853, Murchison adverted to a theme dear to the British heart, the way to India. Robert Stephenson, the railway engineer, had suggested a railroad through Persia and Afghanistan; Colonel Chesney continued to press for the Euphrates river route; but, on the whole, Murchison thought the old overland passage by Egypt and Suez was the most practical way. The Admiralty Surveys, regularly reviewed in the Addresses, helped both to promote and to maintain communications, not only in waters where the Pax Britannica held, but in areas of conflict such as the Black Sea and the rivers of China. American enterprise at sea was also noted, as when Captain Smyth mentioned in 1851 the *Physical geography of the sea* by Lieutenant M. F. Maury USN, a standard work reprinted as recently as 1963.

These were generalities; the two main practical preoccupations of the RGS

were now the Franklin Search and the exploration of Africa. By 1849, the *Erebus* and *Terror* had been missing for more than four years. The search was prosecuted by the British Admiralty, by interests in the United States, by Hudson's Bay Company, and most indomitably of all by Lady Franklin herself. It continued for eleven years, both before and after the official presumption in 1853 of Franklin's death and Lord Ellesmere's obituary in his Address of 1855. Stimulated by Dr. John Rae's discovery of bodies and wreckage in 1855, it was eventually brought to an end by the finding of the cairn in which the final record had been deposited by Captain Crozier. This was brought home by Captain Leopold McClintock, commanding Lady Franklin's ship, the *Fox*, in 1859. It proved not only the death of Franklin and of all who sailed with him, but also that, in their journeyings, they had identified the North-west Passage and its probable course at an earlier date than any claimed by the searchers. In 1860 Lord de Grey and Ripon presented the Society's two Gold Medals for 1859 to Lady Franklin and Sir Leopold McClintock in recognition of this fact.

Africa was the most rewarding field for the RGS in the 1850s, with communications coming in from Livingstone, Barth, Burton and Speke, Baikie and others. Lesser travellers were not forgotten and there is an interesting paragraph in Lord de Grey and Ripon's Address of 1860 headed 'Coloured explorers', which treats of Arab, African and American Negro travellers in West Africa. There are also references to information from Portuguese and Arab sources.

Turning from the Addresses to the *JRGS* itself, it becomes clear that Africa was being steadily penetrated from all sides. Livingstone's crossing of the continent in search of healthy mission sites appears in sections: north from Bechuanaland (1851, 1852), west along the upper reaches of the Zambezi and through Angola to Loanda (1854, 1855, 1856) and on the eastward return journey as far as Linyanti (1857). In the north, the British Government had launched an ambitious expedition to open up a trade route from Tripoli into the Lake Chad area (1851). The death of James Richardson and Adolf Overweg, and, later, of their replacement Edward Vogel, (*Proc.* 1855–57) left Heinrich Barth alone to continue on what was one of the most thorough geographical and generally scientific explorations of Africa in the nineteenth century. Barth's most important discovery was of the course of the river Benue which, he ascertained, flowed westward to join the Niger and not east into Lake Chad as had been conjectured (1851, 1853, 1854, 1860). His report inspired the idea of a new expedition up the Niger, led by Captain Becroft (see above, 1844) and including W. B. Baikie (1855), the Scots doctor, who was one of the first to appreciate the medicinal value of quinine.

Most publicized of all the African explorations of these years were those from the east where the final assault on the Nile sources had begun. Reference has been made earlier to Dr. Krapf who, during the 1840s, made several journeys into the interior from the CMS Mission at Mombasa. His association with the Rev. J. Erhardt is quoted in the first volume of the *Proceedings* (1855–57) in 'An inland sea in Africa', speculating on the existence of what was to prove the region of Central Africa's great lakes. In 1853, Captain R. F. Burton of the Indian Army made his famous journey to Medina and Mecca (1854, 1855) and in the following year he assembled at Aden a team to explore Somalia. The expedition, which included John Hanning Speke, was attacked and dispersed before it could take off. Out of this abortive adventure grew the journey of Burton and Speke from Zanzibar to Lake Tanganyika, in the course of which Speke was to claim Lake Victoria as the main source of the Nile. Burton was allotted

one entire volume of the *JRGS* in which to describe the 'Lake Regions of Central Africa' (1859) while he and Speke are jointly recorded in vol. 3 of the *Proceedings* (1858–59).

In the same decade, C. J. Andersson (1855) and Francis Galton (1852; *Proc.* 1857–58) contributed papers on South-west Africa; and notice was taken of the Hungarian Ladislaus Magyar on one of his journeys eastward from Benguela (1854). W. Desborough Cooley, a geographer who did much to stimulate interest in African exploration (see above), reported on caravan journeys by Arabs in the interior (1854); James MacQueen discussed Portuguese travellers (1860) and entered upon what was to become a heated argument about the Nile sources with a paper on the geography of Central Africa (1856). The second volume of the *Proceedings* (1857–58) contains an account of the voyage up the Niger in the *Dayspring* by W. B. Baikie and D. T. May.

In the Near and Middle East, Henry Rawlinson (see above) returned to the scene with 'Notes on the ancient geography of Mohamrah' on the lower Euphrates (1857) and Consul Keith Abbott of Teheran reported on two journeys (1855, 1857). A scholar too little known, whose travels in Arabia disguised as a Bedouin pre-date the more publicized journeys of Burton, was G. A. Wallin, Professor of Arabic at the University of Helsingfors (1854, 1855; see above 1850). In the Far East, increasing pressure on China to open her ports to trade had also the effect of opening her interior to travel. Lord Elgin, Envoy to the Emperor in 1857, was one of those who took an opportunity to go up the Yangtse, and the journey is described by Laurence Oliphant (1860) and William Blackney RN (1860). The diplomat Harry Parkes wrote on the Russian caravan trade with China (1854) and on Siam (1856, *Proc.* 1855–57). Burma makes a first appearance with a paper by Henry Yule, on the staff of Major Phayre, envoy to the court of Ava (*Proc.* 1857–58).

In North America, Captain John Palliser was carrying out his important explorations of western Canada, recorded in *JRGS* 1860, but more currently and fully in the *Proceedings* for 1858–59, 1859–60. Apart from Palliser, American news—North, Central and South—largely related to communications. Asa Whitney, American railway magnate and inventor, was pressing the claims of his proposed railroad across the United States (Michigan to Oregon) as being of more use than the various projects for rail and canal across the Central American isthmus (1851). A paper by Captain R. Fitz-Roy puts the case for traversing Central America (1853), citing the explorations of British and American parties. Reports appear in the *JRGS* and *Proceedings* as follows: Dr. E. Cullen (1851); A. S. Oersted (1851); Commander Prevost (1854); Lionel Gisborne (1857; *Proc.* 1855–57); and the geographer, A. G. Findlay, contributed a paper on oceanic currents and their relevance to proposed Central American canals (1853). South American geography excited much interest. William Bollaert wrote on southern Peru (1851) and on coal in Chile (1855); J. A. Lloyd, Chargé d'Affaires in Bolivia, discussed communications between that country and the Atlantic (1854); while Clements Markham, of whom much more will be heard, contributed a paper on the Purus, Amazon tributary (1855). The naturalist Alfred Russell Wallace wrote on his travels on the Rio Negro (1853), and also on those in places far from South America, New Guinea (1860) and Borneo (*Proc.* 1857–58).

The furore of Australia's gold rush in the south-east diverted the Society's gaze to the less disturbed areas of the north where Augustus Gregory (accompanied by the artist Thomas Baines) was leading an expedition (1852, 1858; *Proc.*

1855–57, 1857–58). A. C. and F. T. Gregory also contributed to the *Proceedings* of 1858–59.

The Society's involvement in the Franklin Search accounts for the large number of Arctic papers in these *Journals* and *Proceedings*. Since the history is so complex, and has already been touched on, it may suffice to list the contributors: James Anderson, Hudson's Bay Company (1856, 1857), Captain Collinson RN (1856), Commander Inglefield RN (1853), Dr. Elisha Kent Kane of the United States (1856), William Kennedy, commanding Lady Franklin's vessel *Prince Albert* (1853), Captain F. L. McClintock RN (*Proc.* 1859–60), Commander R. M'Clure RN (1854), Dr. John Rae, Hudson's Bay Company (1852, 1855). In addition, there are articles by academic geographers: A. G. Findlay (1856) and Augustus Petermann (1852, 1853; *Proc.* 1855–57). The Antarctic is referred to in the *Proceedings* 1857–58 in a note by Charles Enderby recording the discoveries in 1839 of Captain Balleny.

Scientific and practical research as applied to geography is reflected in Colonel Everest's article on taking longitudes (1860); George Buist (1851) and Major P. Yorke (1851) on aneroids; Thomas Hopkins, vice-president of the Manchester Literary and Philosophical Society, on meteorology (1856, 1858); and Sir J. F. W. Herschel on a new projection of the sphere (1860). The practical approach is emphasized by the appointment of an RGS sub-committee to prepare a handbook, *Hints to Travellers* (1854). The first edition was to be published in 1854 in Vol. 24 of the *JRGS* and separately circulated as a 'thin pamphlet' in the same year; it has remained in print, in different forms, ever since.

IV. JOURNAL OF THE ROYAL GEOGRAPHICAL SOCIETY Vols. 31–40 (1861–70)

PROCEEDINGS OF THE RGS Vols. 7–16 (1861–71)

THE YEARS 1861–70 are dominated by Sir Roderick Murchison. He was elected President for the fourth time in 1862, and was to remain so until his death in 1871. Murchison was a remarkable man, typical of his time both in the informality of his education and in his eminence as a scientist. He was on active service in the Peninsular War before he was 16, and retired from the Army after Waterloo to enjoy the leisured life of a country gentleman. In his thirties, however, he was encouraged to take up science by Sir Humphry Davy, with whom he shared sporting interests, and to enter the busy intellectual world of Victorian London. He specialized in geology and is remembered for his identification of the Silurian system, following extensive fieldwork in Wales, and for his work on the Permian strata in Russia. Murchison is associated with the rapid opening up of Africa, and he threw the Society's weight behind the search for the Nile sources. Nevertheless, his Presidential Addresses (1863–70) reveal many other interests. He was of his age, for instance, in valuing the contribution to be made by new scientific knowledge to the social and economic welfare of mankind, and lost no opportunity of advocating research and exploration in the service of trade and communications. Commenting (1867) on the Admiralty Surveys, he observed that 'the labours of the Surveyor have always been and always must be, the precursor of commerce'. The Treaty of Tientsin which, in 1861, concluded the war with China, was seen by Murchison as a spur not only to seaborne commerce, but to the opening of trade routes across

the land mass of Asia—over the Himalaya by way of Kashmir or from newly penetrated Burma through Assam. He took note, too, of the mid-century proliferation of cables across the globe to carry the electric telegraph. The laying of the submarine line between India and Britain during 1862–64, by way of the Persian Gulf, was the subject of his close attention in the Presidential Address for 1863. Another of his enthusiasms was for Russia and Russian geographers with whom he had established friendly contact during his travels in their country during the 1840s. He was closely concerned with the founding of the Imperial Geographical Society of St. Petersburg in 1845, and the names of Russian explorers in Central Asia figure largely in the *JRGS* during 1861–70. Unlike many of his contemporaries. Murchison saw no threat to British interests in India from such penetration in the region of the Pamirs (1866).

The Addresses of 1861–70 also contain references to: the completion of the mapping of the British Isles by the Ordnance Survey (Ashburton, 1861, 1862): weather forecasting by the Board of Trade and their use of the 'electric telegraph' in the collection of data (Ashburton, 1862; Murchison, 1866): historico-geographical research by the newly formed Hakluyt Society (Murchison, 1867): cartography connected with military campaigns in China (Ashburton, 1861) and in Ethiopia on the Magdala campaign (Murchison, 1868). Murchison, the geologist, also gave much space to the subject of physical geography in his Addresses for 1863, 1864, 1868 and 1869.

The Fellowship of the Society was 1200 in 1859; by the time Murchison delivered his 1870 Address, it had risen to 2263 and meetings were so popular that the main body of the hall had to be reserved for Fellows while 'visitors and ladies' were restricted to the sides (1868). The *JRGS* reflects the Society's prosperity as much as it does Murchison's wide interests, and the parallel *Proceedings* enlarge the scene in their more detailed reports of meetings. To take Africa first: Burton's and Speke's journey to the Central African lakes (1858, 1859) in the previous decade was followed up by the RGS-sponsored expedition led by J. H. Speke, with J. A. Grant as his companion, in 1859–62, which was to re-examine Speke's claim that Lake Victoria was the main source of the Nile. This had been disputed by Burton, less from geographical knowledge than from personal animosity. Speke and Grant travelled into Buganda and thence north to the navigable head of the Nile at Gondokoro. Here they met Samuel White Baker, fresh from exploring the Nile tributaries of Ethiopia (1863: *Proc.* 1862–63, 1864–65), and saw him on his way to Lake Albert (1866). Speke's own journey was followed in *Proc.* 1860–61, 1861–62, 1862–63. The meeting at which he and Grant were welcomed home is reported in *Proc.* 1862–63 and his own rather sketchy account of the expedition is in the *JRGS* 1863. Although there was good evidence that Lake Victoria was a primary and Lake Albert a secondary source of the Nile, argument among geographers continued for many years to come. Meanwhile Livingstone had returned from leading the government-sponsored expedition which it had been hoped would bring Christianity and commerce into Africa by way of the Zambezi river. Balked by the impassable Kebrabasa rapids, he turned north up the Shiré river to 'discover' Lake Nyasa and Nyasaland (modern Malawi). Papers relating to the Zambezi expedition were published in the *JRGS* by Livingstone (1861, 1863, 1864); by Dr. John Kirk (1861, 1864); and by the geologist who died in the field, Richard Thornton (1864, 1865). The artist Thomas Baines contributed to *Proc.* 1858–59.

Speke's death in a shooting accident in 1864 left the Nile question more

confused than ever, and the dispute was fanned by Burton in a paper on Lake Tanganyika (1865) which he now put forward as the true Nile source. Murchison, determined to have the matter cleared up, persuaded Livingstone to return to Africa in 1866. This marked the beginning of Livingstone's last journey, during which he was cut off in Africa until his relief by H. M. Stanley in 1871. There are references to the explorer's progress and possible death in Murchison's Addresses of 1867, 1868, 1869 and 1870: and in *Proc.* 1866–67 and 1867–68. The report of the Livingstone Search expedition led by E. D. Young is in *JRGS* 1868. Other African news during the decade came from W. B. Baikie on the Niger (1867); Thomas Baines in South-west Africa (1866); R. F. Burton (1863) and the American M. P. B. du Chaillu (1866) in West Africa; Baron von der Decken in the Mount Kilimanjaro region (1864); Clements Markham on the Magdala campaign (1868); John Petherick on the White Nile (1865), and a desperate letter from Mrs. Petherick about Speke's hasty accusations of her husband is printed in *Proc.* 1863–64. 'The Dutch Ladies' Expedition from Khartoum up the river Bahr el Ghazal', led by the remarkable Miss Alexine Tinné, deserves to be rescued from the comparative obscurity of the *Proceedings* (1862–63, 1863–64).

In Asia, the Indian scene is dominated by the Survey which, though active throughout the sub-continent, attracted most attention by its northward progress across the Himalaya. Here survey took on the aspect of a secret service exercise, partly to circumvent the suspicions of exclusive Tibet, partly to play the 'Great Game' of outwitting Russia. Captain T. G. Montgomerie contributed several papers on the trans-Himalayan surveys for which he was training Indians to travel in disguise into Tibet (1866, 1868, 1869). The 'native Moonshee' referred to by Murchison in his 1866 Address was one of these. Captain H. H. Godwin-Austen contributed papers embodying useful geographical research in Kashmir, especially into the formation of glaciers (1861, 1864, 1867). The Society also took considerable interest in G. W. Hayward, an independent traveller who went from Leh to Yarkand and Kashgar (1870) and was later murdered on his way into the Pamirs (*Proc.* 1870–71).

China and Japan now come over the horizon: the first as a result of the opening of the Treaty Ports; the second penetrated by the US Navy under Commodore Perry in 1863. One of the first records of travel into the Chinese interior was that of C. M. Grant who travelled home from Peking across Mongolia and the Gobi desert to St. Petersburg (1863). A similar journey was to be taken in the following decade by Ney Elias who now makes a first appearance in the *JRGS* as the author of a study of the Yellow River, or Hwang Ho (1870) which he undertook to relieve the tedium of an office job in Peking. In Japan, Britain's first Consul General, Rutherford Alcock, travelled in the interior and reports of his journeys appeared in *JRGS* 1861 and 1862, and in *Proc.* 1861–62. In south-east Asia there was a strong French presence, and Henri Mouhot described his travels in Cambodia (1862). Alfred Russell Wallace, whose theory of evolution coincided with Darwin's, was doing important work in the Malayan Archipelago (1863).

During this decade a number of papers by Russian travellers in Central Asia were published in Russian periodicals and translated for inclusion in the *JRGS* by Robert Michell, John Michell and E. Delmar Morgan. Travellers included were: C. P. Struve (1869); C. P. P. Semenov, later known as Semenoff-Tyan-Shanski in honour of his exploration in the Tian Shan range (1861, 1865, 1869); W. Veniukoff (1862, 1866); A. Abramoff (1862, 1865); and Admiral Boutakoff (1867).

In South America, the scientific tradition established by Humboldt and carried on by Schomburgk, was maintained by such men as the botanist Richard Spruce (1861) and by W. Chandless on the Amazon tributaries (1862, 1866, 1869, 1870). The ubiquitous Clements Markham went on a secret mission to Peru to secure enough cinchona cuttings to start plantations in India as a measure against malaria. Policy considerations prevented mention of his real purpose in his account of Caravaya Province in southern Peru (1861). South American nationals also took an interest in their own territories and reported to the RGS: for instance, Professor Antoni Raimondi, RGS Corresponding Member of Peru (1867, 1868).

In Australia, John M'Douall Stuart at last reached the north coast from Adelaide (1861, 1862, 1863) while, further east, another south-north traverse was achieved by the unlucky expedition from Melbourne associated with the names of Burke and Wills (1862, 1863). F. T. Gregory (see 1852, 1858) was working successfully in north-west Australia (1862). G. Neumann's 'On a project for the scientific exploration of Central Australia' appears in *Proc.* 1867–68.

A revival of interest in polar travel, and the emergence of strong Scandinavian participation, is heralded by a paper by A. E. Nordenskiold (1869), the great Arctic traveller, originally from Finland but operating from Sweden where he had taken political asylum as a student. *Proc.* 1861–62 contains a note from the American C. F. Hall and one from Dr. John Rae of Hudson's Bay Company. Discussion at RGS meetings on the question of Arctic travel is recorded in the same volume of the *Proceedings* with stress on reaching the North Pole. *Proc.* 1864–65 contains a number of important views and comments. As regards the Antarctic, J. E. Davies RN contributed a paper on the southern latitudes in connection with the Transit of Venus (1869). An interesting item from the north is a paper from C. M. Doughty, later of Arabian fame, on his survey of the Jostedalbrae in Iceland (*Proc.* 1864–65). Sir Leopold McClintock's 'Narrative in search of Sir John Franklin . . .' is in *JRGS* 1861.

V. JOURNAL OF THE ROYAL GEOGRAPHICAL SOCIETY
Vols. 41–50 (1871–80)

PROCEEDINGS OF THE RGS Vols. 17–22 (1871–78)

IT WOULD BE giving too much importance to personalities to attribute solely to Murchison's death (in 1871) the slowing of tempo in the 1870s under his successors Sir Henry Rawlinson, Sir Bartle Frere, Sir Rutherford Alcock and Lord Northbrook. Other influences were at work which were to make great changes in the scene over which the RGS had presided since its founding in 1830. By the 1870s, primary exploration of the habitable continents had reached a stage when the individual traveller was giving way to the engineer, the homesteader, the missionary and the merchant. The politicians were taking a hand, and in Africa the 'scramble' was soon to be under way. In 1876, King Leopold of the Belgians called a conference in Brussels to discuss joint action in Africa by interested European powers. The proposals were general, directed to the elimination of the slave trade and the establishment of centres for the spreading of commerce and of European culture. After careful deliberation, it was decided that the RGS, though represented at the Brussels conference, was precluded by its Charter from participating in the proposed International Association, which

had aims other than 'strictly geographical'. But rather than be excluded from a field it had made peculiarly its own, the Council set up an African Exploration Fund (Alcock, 1877). This financed an expedition to the Central African lakes in 1878, led by Keith Johnston, Jnr., who died in the field leaving his task to be successfully accomplished by his assistant, Joseph Thomson (Alcock, 1878; Northbrook, 1880). Both Alcock (1878) and Northbrook (1880), however, took note of the progress of the International Association. Journeys inland from the east coast and the establishment by the Belgians of a culture centre at Karema on Lake Tanganyika clearly reflected Leopold's original aims, but the spirit of international rivalry was soon to appear. The confrontation across the Congo of the French de Brazza and the Belgian-employed Stanley, as also the creation of Africa societies in Germany, were early signs of the 'scramble'.

Exploration was also being taken over by missionaries. Livingstone's death in 1873 inspired a burst of activity, and messages from Stanley on his way through Buganda in 1876 encouraged the trend. Alcock in 1878 and Northbrook in 1880 alluded to the work of Protestant Missions north and south of Lake Victoria, on the way to Lake Tanganyika, and in west and south-east Africa. Some geographical loose ends remained to be tied up of true, basic exploration, especially those tangled by the controversy over the Nile sources and obscured by the storm over the fate of Livingstone, who, commissioned to settle the matter, was evidently astray in the neighbourhood of Lake Tanganyika. This is no place to describe how Stanley's persistence in the face of obstacles of every kind brought him to Livingstone at Ujiji when the Doctor's own friends had failed. There were uneasy echoes of what was afoot in Rawlinson's Address of 1872, and assurances that the Society's own relief expedition was on its way. There was much ill feeling but, by the time Rawlinson addressed the Society again (1873), tempers had cooled. It was acknowledged that useful geographical information had been obtained by Livingstone's and Stanley's journey to the northern end of Lake Tanganyika, which proved that no direct link existed with the Nile system. Rawlinson also announced a new expedition to relieve Livingstone (now on the move again) which was to be commanded by Lieutenant-Commander Verney Lovett Cameron. Cameron was to meet Livingstone's followers, with the explorer's body, but he continued to make an east-west crossing of Africa (1875; *Proc.* 1874–75). Stanley himself on his trans-African journey of 1874–77 was to dissociate Livingstone's Lualaba river from the Nile system and to connect it correctly with the Congo (Zaire), which he was to follow to the sea (1876; *Proc.* 1877–78). Colonel Gordon, who had succeeded Samuel Baker as Governor of Equatoria in 1878, contributed further confirmation of the Nile system as conceived by Speke and Baker in tracing the connection between Lakes Victoria and Albert (1876; *Proc.* 1876–77). His assistants, Gessi (*Proc.* 1876–78) and Mason (*Proc.* 1877–78), explored Lake Albert which proved unlikely to have any connection with Tanganyika. Burton's candidate for the Nile source was thus eliminated. Livingstone's death in Central Africa in 1873 was a climax to this phase of exploration. His people brought his body back to the coast, being awarded bronze and silver medals according to degree; Susi and Chuma received their silver medals at the Anniversary Meeting of 1874 when Sir Bartle Frere delivered an obituary notice both of David Livingstone and of his brother, Charles. Vols. 17 and 18 of the *Proceedings* (1872–73, 1873–74) contain many references to Livingstone between his relief by Stanley at the end of 1871 and his death two years later, to his interment in Westminster Abbey, and to rewards for his followers and a pension for his children.

During this decade of the *JRGS* and *Proceedings*, there are also papers by, among others, Lieutenant Julian Baker who accompanied his uncle Samuel during the latter's Governorship of Equatoria (1874); about Thomas Baines on the Limpopo (1871); Captain F. Elton, Consul at Mozambique, in south-east and in east Africa (1872, 1874); Colonel J. A. Grant on the 'Geography, climate and natural history' observed on his journey with Speke in 1860–63 (1872); Gustav Nachtigal in the Sahara (1876); the Rev. Charles New on Kilimanjaro (*Proc.* 1871–72) and his excursions from Mombasa (1875); Joseph Thomson in east central Africa (1880); and the notable African Christian, Bishop Crowther, who contributed notes on the river Niger (*Proc.* 1876–77).

Africa was not the only field of international rivalry in the 1870s. In the Arctic, where there had been a lull in British activity since the conclusion of the Franklin search, European nations and the United States were entering the field. Afraid of losing ground in a traditional sphere, the RGS began pressing the Government to launch further research by the Royal Navy. In his Address of 1872, Rawlinson described the work of the Society's Arctic Committee, inspired by Admiral Sherard Osborn, veteran of the Franklin search and an advocate of the use of steam vessels in ice. Rawlinson, in 1873, and Frere, in 1874, had to announce a negative response from the Government, due to Admiralty pre-occupation with HMS *Challenger's* deep sea research in the Atlantic and as far south as the Antarctic Circle. Gladstone said 'no' to Frere in 1874; but Disraeli said 'yes' to Rawlinson in 1875, on the completion of the *Challenger* mission. Captain George Nares was recalled from his command of *Challenger* to organize a new Arctic expedition. Two screw steamers, *Alert* and *Discovery*, sailed north in 1875. Nares did not reach the North Pole, by now the goal in the international race, but he achieved an impressive 'furthest north', beyond that reached by his nearest rival, the American Charles Hall, in 1871. Nares contributed two papers to *Proc.* 1876–77, a volume which contains other material on the expedition. Meanwhile, the scene was dominated by Nordenskiold. He explored Arctic Siberia (Rawlinson, 1875, 1876) and penetrated the north-east passage in the *Vega* (Northbrook, 1880). In 1875, Lieutenants Weyprecht and Payer of the Austrian Navy received the Society's two Gold Medals for their 'explorations and discoveries in the Arctic Sea'.

Despite these new rivalries and some loss of its former dominance, the Society prospered. In 1871 new premises were acquired (Murchison, 1871; Rawlinson, 1872) and, by 1876, Rawlinson was able to announce that the Fellowship had topped the 3000 mark. The variety of the scene is illustrated by the 10 substantial *Journals* of the period, backed up by the *Proceedings*. Africa has been referred to above, and Asia also takes up much space. In 1871 Murchison described the work of the Survey of India in 'a most difficult and pestiferous region' in the Godavary basin, where Rawlinson (1873) declared that the work was 'much hindered by the unhealthiness of the country and the number of tigers'. Hazards of another kind were met with during the Afghan campaigns of the 70s when Captain Samuells' planetable was upset by a cannon ball and Captain Leach won the VC under fire (Northbrook, 1880). The exploits of Indian surveyors in the north are commemorated in the *JRGS* by T. G. Montgomerie (1871, 1872, 1875) and H. Trotter (1877); H. H. Godwin Austen describes survey work in the Garo Hills (1873); and there is a report from the independent traveller, G. M. Hayward (1871).

China, and the routes thither by land and sea, attracted attention perhaps mostly for commercial and political reasons, but to this period belong two

important geographical journeys by Ney Elias, one through western Mongolia (1873) and the other from Burma into Yunnan (1876). Captain W. J. Gill, commemorated in one of the Society's yearly awards, travelled in western China and on the eastern borders of Tibet (1878). The mission to Kashgar of T. D. (later Sir Douglas) Forsyth came in for Presidential comment by Frere (1874) and Alcock (1877), and there are letters from Forsyth himself in *Proc.* 1873–74. Trotter summarized the Mission in *JRGS* 1878, and Forsyth's own paper on the Gobi Desert is in *JRGS* 1877. In Japan, A. F. Jeffreys made an ascent of Fuji-yama (*Proc.* 1874–75).

In other spheres, New Guinea attracted increasing attention with three visits paid by the Rev. Wyatt Gill (1874) and with the surveys of Captain Moresby commanding HMS *Basilisk*. In Australia, Alexander Forrest in the south-west (1872), John Forrest in 'Western Australia' (1871, 1875) and Ernest Giles in 'From South to Western Australia' (1876) continued to open up the interior. A telegraph line was laid from Adelaide to the north coast along M'Douall Stuart's route, 'a hand rail' for future travellers, said Rawlinson in his 1873 Address. *Proc.* 1874–75 rounds up news from Western Australia and contains much about New Guinea.

In South America, R. Crawford prospected for a railway over the Andes from the Argentine Republic (1873) and George Chaworth Musters travelled in Patagonia (1871) and Bolivia (1877). The South American Governments continued to take action of their own, often through European employees as described by Murchison in 1871.

The last volume of the *JRGS* (1880) contains a history of the Society to date, by its Secretary Clements Markham. Markham had been a constant inspiration to the Society's work, and his subsequent Presidency, 1893–1905, rivalled Murchison's in duration and importance.

VI. PROCEEDINGS OF THE ROYAL GEOGRAPHICAL SOCIETY

(*New Series*)

Vols. 1–14 (1878–92)

THE NEW *Proceedings* combined the essential features of the *JRGS* and the old *Proceedings*, with some additions. (See title page). An interesting feature of *Proc.* (NS) is the frequent quotation from overseas journals, among others *Petermanns Mitteilungen* of Gotha; *Mouvement Géographique* of Brussels; the *Bulletin* of the French Geographical Society; the *American Journal of Science*. The founding of the *National Geographic Magazine* of Washington is noted in *Proc.* (NS) 1889, Geographical Notes for February.

The New Series made a far more substantial contribution to geographical knowledge than its predecessors; whereas in no decade of the *JRGS* alone were more than 200 papers published, the 14 yearly volumes of the new journal contain 455 major articles.

This was a period notable for trends rather than for achievements, as emerges from the Addresses of four Presidents: Lord Aberdare, the Marquis of Lorne, General Strachey and M. E. Grant Duff. All realized that the RGS must look beyond the glamorous business of primary exploration, and the 1880s see a strong movement for the improvement of geographical education. It was strange, observed Lord Lorne in 1886, that the British, who had done so much to explore

and colonize, should ignore geography in their schools. The RGS Medal scheme for Public School boys, initiated by Galton in 1869, had not caught on and was abandoned in 1884. In the same year the Council appointed J. Scott Keltie, the Society's Librarian and later Secretary, 'Inspector of Geographical Education' (Geogr. Notes, July 1884) and his report on geography in schools was referred to by Aberdare as drawing 'a dismal picture . . . in striking contrast' to the situation in Germany. Geography, it seemed, was not wanted at the universities and so was not taught to examination level in the schools. The Society directed its attention to converting Oxford and Cambridge. The campaign, referred to by Strachey in 1887, 1888 and 1889, resulted in the appointment of H. J. Mackinder as Reader in Geography at Oxford in 1887, and, a year later, a lectureship was established at Cambridge, held briefly by F. H. H. Guillemard, who was succeeded by J. Y. Buchanan in 1889. Mackinder's classic 'Scope and methods of geography' was published in *Proc.* (NS) 1887. J. Y. Buchanan, who had been chemist and physicist on the voyage of the *Challenger*, published (in *JRGS* 1877) the first map ever produced of oceanic salinity, and his paper on ocean currents appeared in *Proc.* (NS) 1886. A series of lectures on geography, delivered by General Strachey to the University of Cambridge during 1888, is published in the *Proc.* (NS) for 1888, and there are progress reports from Oxford and Cambridge in 1888, 1889, 1890, 1891 and 1892. Grant Duff dwelt on the value of geography and history teaching in his Addresses for 1890 and for 1891, and with particular eloquence in 1892.

The RGS did not abandon practical geography for the 'armchair' variety, but extended the help first offered in *Hints to Travellers* (1854), and, in 1879, initiated a scheme of instruction for would-be explorers. In 1882, Aberdare recalled that, to date, 532 lessons had been given in practical astronomy, route surveying and mapping to 42 students. In 1886, Lorne announced that geology, botany and photography had been added to the subjects taught. John Thomson, RGS instructor, contributed an article on photography in exploration to *Proc.* (NS) 1891. Cuthbert Peek derived so much benefit during a journey to Iceland from this RGS tuition that he endowed an award still presented annually by the Society (Lorne, 1886; Strachey, 1888).

There was great activity in Africa in the 1880s. Stanley's labours in the Congo Free State in the 1870s had opened the upper reaches of the river to missionaries and administrators. The Baptists, T. J. Comber and George Grenfell, contributed important information to *Proc.* (NS) (Comber, 1879, 1881, 1884: Grenfell, 1885, 1886); Grenfell's map of the Congo, the result of meticulous navigation, was published by the RGS in 1902. Among the employees of the Free State who read papers to the Society were Stanley's successor, Sir Francis de Winton (1886), J. R. Werner on the Ngala and Aruwimi tributaries (1889), and Captain Vangele on the Welle-Mobangi river (1889). In east and central Africa, the missionaries were branching out with a combination of religious and geographical zeal for which Livingstone had set the pattern. Edward Coode Hore, the seaman turned evangelist, explored Lake Tanganyika from 1884 onwards in a steam vessel provided by the London Missionary Society (1882, 1889). J. T. Last, also of the LMS, ranged widely from his station at Mboia (1882, 1883, 1887). Mrs. Hore and Mrs. Last accompanied their husbands, adding a new dimension to the rugged exploration scene. There were Scottish missionaries in Nyasaland, notably the two James Stewarts of Livingstonia (1879, 1881, 1883) and, in Uganda, A. M. Mackay, who coasted the western shore of Lake Victoria (1884). The independent missionary, F. S. Arnot, was the first European to live

and work in Katanga (1889), and, offshore, the Rev. James Sibree explored Madagascar (1891, 1892).

The Consular Service also offered opportunities for travel, made the most of by H. E. O'Neill of Mozambique (1882, 1883, 1884, 1885, 1887) and H. H. (later Sir Harry) Johnston on the Congo (1883), on Kilimanjaro (1885), up the Cross River (1888), on the Niger Delta (1888), in the Cameroons (1888) and in Mozambique (1890). There were those, too, who came to Africa to play and stayed to work, such as F. C. Selous, Rhodesian pioneer (1881, 1883, 1888, 1889, 1890) and Alfred Sharpe, later Sir Alfred and Governor of Nyasaland, who travelled on the Shiré and Zambezi and into Katanga (1890, 1891). The RGS was directly involved in an expedition led by Joseph Thomson through the Masai country (1883, 1884); in one led to the south-west of Lake Nyasa by J. T. Last (1887); and in the researches of Theodore Bent into the Zimbabwe ruins (1892). The Society was also interested in the Emin Pasha Relief Expedition, led by H. M. Stanley, which crossed the continent from the Congo mouth to Bagamoyo, on the East African coast, and solved the last few outstanding points of the Nile controversy. It is mentioned in the Addresses of Lorne (1886), Strachey (1887, 1888, 1889) and Grant Duff (1890); in 'Geographical Notes' during 1887, 1888, 1889; and by Stanley himself (1889, 1890).

Travellers other than British, including those working for the International African Association, are also to be met with in *Proc.* (NS). There is a record of the German African Association's work in western equatorial Africa in *Proc.* (NS) 1892, and accounts of the travels of G. A. Fischer in the Masai country (1884), Wilhelm Junker on the Upper Nile (1887), Lieutenant Wissmann in central Africa (1883, 1888) and Dr Hans Meyer on Mount Kilimanjaro (1890). Among the Portuguese were Serpa Pinto (1879) and Silva Porto (1887). The Frenchmen, Count de Brazza on the Ogowé and Louis Binger on the Ivory Coast, were mentioned by Aberdare in 1882; and the Hungarian Count Teleki, at remote Lake Rudolf, by Strachey in 1889. A 'Geographical Note' of June 1891 records a daring exploration by Mrs. May French Sheldon, one of the first women to be elected a Fellow of the RGS, who struggled through dense undergrowth to reach Lake Chala on the slopes of Kilimanjaro.

The political implications of African exploration were not forgotten. A paper by Sir Rawson Rawson, in *Proc.* (NS) 1884, on the partitioning of Africa (read with much interest in Germany) caused a stir, and a long passage in Strachey's Address for 1889 reveals anxiety about the future role of Europeans in Africa.

In Asia, imperial expansion was affording geographical opportunities. The annexation of upper Burma, in 1885, stimulated interest in trade routes between India and China and in the nature of the intervening terrain. Controversy sprang up, less bitter and prolonged than over the Nile, but nevertheless involving lively argument, as to the sources and courses of the great rivers which poured out of Tibet—the Brahmaputra, the Irrawaddy, the Salween and the Mekong. In particular, was the Sanpo (or Tsang-po) of Tibet, first noted by Jesuit missionaries in the eighteenth century and since explored by the Survey of India 'Pundits', the headwater of the Brahmaputra of Assam or the Irrawaddy of Burma? Major J. E. Sandeman (1882) favoured the former, the civil engineer Robert Gordon (1885) the latter. General J. T. Walker (sometime Surveyor General) maintained rightly that the Sanpo and the Brahmaputra were one and discussed the hydrography of Tibet in papers published in *Proc.* (NS) for 1885, 1887 and 1888. Further light is thrown on the subject by Captain St. J. Michell (1882, 1888), Sir Richard Temple (1881) and Colonel R. C. Woodthorpe (1889).

In the north of the sub-continent, the Afghan War of 1888 gave geographical scope to Captain (later Sir) Thomas Holdich, a specialist on boundaries (1881, 1883, 1885). Holdich also gave his mind to African boundaries in a paper in *Proc.* (NS) 1891, and later, at a date outside our period, to the frontiers of South America.

Other important travellers in Asia were Ney Elias (Strachey 1887), F. E. Younghusband (1888, 1892) and Colonel Prejavalsky (1887, 1890) in Central Asia; Martin Conway, one of the early independent climbers in the Himalaya (1892), and the American W. W. Rockhill in Tibet (1889). G. James Morrison (1880), E. Colborne Baber (1883) and the American A. R. Agassiz (1891) communicated from China. Arabia is represented (among others) by Wilfred Scawen Blunt (1880) and Charles Doughty (1884). The Society's antiquarian interest in the Middle East, vigorous in its early days, was revived and the Council gave active backing to Mr. and Mrs. Theodore Bent (see above at Zimbabwe, 1892) in Turkey (1890) and to Professor and Mrs. Ramsay (1888). Ramsay's *Historical geography of Asia Minor* was published as an RGS Supplementary Paper in 1890, and re-issued as lately as 1962. George Nathaniel (later Lord) Curzon makes a first appearance as an authority on Persia (1890, 1892), and new ground is broken by the climber, Douglas Freshfield, who travelled in the Caucasus (1885, 1887, 1888, 1890, 1892; with W. F. Mummery, 1889).

Beyond Asia, the exploration of New Guinea proceeded apace, aided by the missionaries, J. Chalmers (1887) and W. G. Lawes (1880, 1884), and by the Territory's administrator, Sir William Macgregor (1890). The Americas were less to the fore. The most noteworthy contributions were from Everard im Thurn in Guyana (1880, 1885, 1892), A. P. Maudslay in Guatemala (1883, 1886), F. A. A. Simonds in Colombia (1879, 1881, 1885) and Edward Whymper in Ecuador (1881).

The Arctic lay almost entirely in Scandinavian hands: see Nansen (1889) and Nordenskiold (1879, 1880, 1884). Britain is represented by Leigh Smith (1881, 1883) and the United States by Lieutenant Robert E. Peary (1892), later to be the first at the North Pole.

There is a slight increase in the period in papers on geographical and historical research and theory. A subject beginning to exercise the Council of the RGS was the rationalization of geographical place-names, and in 1891 Colonel Holdich proposed an inter-departmental committee to 'arrive at a definite, universal system for English map spelling', thus foreshadowing the Permanent Committee on Geographical Names now housed at the RGS; (see Geogr. Notes, *Proc.* (NS) October 1891, and Grant Duff's Presidential Address for 1892). Cartography was being developed; Professor Cayley discussed the colouring of maps (1879) and Francis Galton the construction of isochronic passage charts (1881), while E. G. Ravenstein, in a paper on bathyhypsographical maps in 1886, considered the combination of Ordnance and Admiralty surveys. Among historical papers are the communication by R. H. Major of an ancient map of Iceland discovered by Nordenskiold (1883), notes on the oldest records of the sea route to China from western Asia by Colonel H. Yule (1882) and a paper on Columbus by Clements Markham (1892).

The proposal to admit ladies as full members of the Society is the subject of a 'Geographical Note' in June 1892, and this, heralding a new era in the Society's history, may form a fitting conclusion to our survey.