Congo, and from Lüderitzbucht on the Atlantic to Durban on the Indian Ocean, forming a network of journeys that cover an area one-third the size of Europe! Yet this comprehensive programme is so skilfully worked out that every member has an opportunity of taking part in a large proportion of the excursions. These range from half a day to twelve days—and they study not only the taste but also the purse, while their scientific success should be assured when one glances at the names of the leaders. Among the outstanding geological features to be visited are the Victoria Falls (with their fascinating physiographical history), the Bushveld Complex, the Karroo, the Great Eastern Escarpment of the Drakensberg at the Devil's Kantoor (the magnificent scenery of which has made this a classical spot for studying the tremendous physiographic contrast in the relationship between the Central Plateau and the coastal belt), the Zululand Cretaceous Beds, and the unique Vredefort Dome, where a central granite is surrounded by a girdle of sediments showing an inversion of the succession through thousands of feet of thickness, and associated with an almost incredibly intense metamorphism. Through the published work of Molengraaff, Hall, and Nel, much detailed information on these extraordinary phenomena is available. Of the various occurrences of alkali rocks, the programme provides a visit to the Franspoort bodies near Pretoria, the alkali-granites and canadites round the Vredefort Dome, as well as the Pilandsberg (with its remarkable ring inclusions)—the largest alkali mass yet examined in detail, which has recently been described by Shand (*Transactions of the Geological Society of South Africa*; 1928).

Economic geology naturally has a prominent place in the programme: the Kimberlite diamond pipes of Kimberley and the Premier Diamond Mine (whence came the largest diamond on record), the Witwatersrand with the world's most important goldfields, the primary platinum deposits of the Bushveld, the remarkably rich asbestos mines near Barberton, the rare chromite occurrences in the Bushveld Complex, the ore deposits and peculiar desert geology of South-West Africa, including the mineralogists' well-known hunting ground of the Tsumeb lead and zinc mines, and last, though certainly not least, the copper-bearing regions of Northern Rhodesia, now recognised as a most important asset in the mineral resources of the British Empire.

The Congress has also begun the practice of setting aside for special study the world's resources in certain types of ores—for example, iron, coal, pyrites—and the resulting volumes remain a handsome testimony to the foresight of the Congress. No happier choice could have been made for the South Africa meeting than the subject of the "Gold Resources of the World".

The recent publication by the Geological Survey of the Union of a map on the scale of one in a million, also the latest volume (written by some members of that Survey) in the well-known series of the "Handbuch der regionalen Geologie", dealing specifically with the Union, will be much appreciated by visiting geologists in particular. For those who may want to take in a wider field there is the admirable volume by Du Toit on "The Geology of South Africa".

The almost simultaneous meeting in South Africa of the British Association, under the presidency of a distinguished geologist, Sir Thomas Holland, and the useful measure of co-operation with the Congress, arranged for at Johannesburg and Pretoria, will render 1929 a memorable year in the history of geology, while the gathering of the world's geological clans in that sub-continent may well repeat the truth of the well-known phrase "Ex Africa semper aliquid novi". A. L. H.

Obituary.

THE MAHARAJ RANA OF JHALAWAR.

THE announcement in NATURE of April 20 of the death of the Maharaj Rana Bhawani Singh of Jhalawar while again on his way to Europe recalls the fact that, of those with whom he was associated in previous visits, too many would not have been here to welcome him. He would doubtless have missed especially Sir James Dewar at the Royal Institution, Prof. A. D. Waller at the Physiological Laboratory in the top story of the University of London, Sir Archibald Geikie, president of the Royal Society at its 250th anniversary, which the Maharaj Rana attended as a delegate from India; and besides those, Miss K. Stephen, principal of Newnham, in 1912, and the presidents of the meetings of the British Association, Sir William Herdman at Cardiff in 1920, Sir Edward Thorpe at Edinburgh in 1921.

The Maharaj Rana's first visit to Europe in 1904 furnished material for a book of travel pictures, published in 1912, when he came to England for a long stay with a suite of court officials in attendance, among whom, the Pandit Shyam Shankar was indefatigable in providing opportunities for the acquirement of knowledge of the West and the diffusion of knowledge of the ways and customs of the East.

Meteorology was one of the sciences that caught the Maharaj Rana's attention. He became a familiar figure at meetings of the International Commissions for Maritime Meteorology and for Weather Telegraphy which were held in London in September of that year. It was an interesting time, because telegrams from Iceland, wireless telegrams from ships, and an international code for gale warnings were on the agenda papers. The Maharaj Rana acknowledged the courtesy of the Commissions by a stately dinner, at which, with other novelties, the members with their ladies were initiated in the parting ceremonies of garlands and attar of roses.

A visit to Cambridge in the same year provided the experience of luncheon and the gardens at Newnham College, with an exchange of civilities

between potentate and student by the aid of hand cameras: then dinner in a college hall and the cultured serenity of the combination room, so impressive as to suggest that two or three years at an English university would form the proper completion of the education of the heir to a throne. In 1920 that idea found expression at Oxford. Kumar Rajendra Singh, recently married to the daughter of the Maharaja of Vizianagram, went to Christ Church, and the Maharaj Rana enrolled himself at New College. Apart from a short return home in 1921, he lived in Oxford for two years; but he was always to be found at the lectures of the Royal Institution. The British Association, the Royal Sanitary Institute, the Royal Aeronautical Society, and again, whatever was going on at the Meteorological Office, engaged his attention, including another meeting of the International Commission for Weather Telegraphy. His part in the many scientific meetings which he attended was mainly to listen and appreciate. Conversation was favoured as a mode of expressing himself, rather than writing or speechmaking; in that and in his letters he was invariably alert and precise.

The *Times* of April 15 gave a striking account of the character and achievements of the Maharaj Rana as a ruler. Others will cherish the remembrance of a genial and enthusiastic student of Nature and art. As a Rajput his traditions and reminiscences were of military prowess and achievements with the bow. As one condoles with the new Maharajah on the loss of his father, it is impossible not to wonder what would happen if the Indian princes betook themselves to the conquest of the secrets of the Nature that surrounds them; if they should turn their swords into tuning-forks and their arrows into sounding balloons. NAPIER SHAW.

SWEDISH zoology has sustained a serious loss in the death of Prof. Nils Johan Teodor Odhner, which occurred at Stockholm on Oct. 29, 1928. Prof. Odhner was born at Lund in 1879. Graduating at the University of Uppsala, he became lecturer in zoology at that University. In 1914 he was nominated as professor of zoology in the University of Oslo (Norway), and four years later he became *Intendant* of the department of invertebrates in the State Museum of Natural History in Stockholm. Prof. Odhner's zoological work consists principally of systematic and faunistic papers on the Trematoda, upon which group of animals he had been for many years a leading authority. He also devoted some time to the study of certain groups of Crustacea. His activities were not, however, confined to zoological research. His wide social interests and energetic contribution to the intellectual life of his country are manifested by the various official positions which he occupied—as a delegate to the League of Nations, president of the Sweden-Finland Foundation, and vice-secretary of the Swedish Academy of Science. As a speaker and writer he contributed much to the popularisation of his own branch of science.

WE regret to announce the following deaths:

The Right Hon. the Earl of Rosebery and Midlothian, K.G., K.T., F.R.S., Chancellor of the University of London, who was elected to the Royal Society in 1886 under Statute 12, which permits of the election of persons who "either have rendered conspicuous service to the cause of science, or are such that their election would be of signal benefit to the Society", on May 21, aged eighty-two years.

M. Emile Chaix, professor of physical geography at the University of Geneva, aged seventy-four years.

News and Views.

THE most important legislation affecting the welfare of migratory birds, since the Migratory Bird Treaty Act of 1918 between the United States and Canada, was passed by the U.S. Senate on Feb. 11, and signed by President Coolidge on Feb. 18. This was the Norbeck-Andresen Migratory Bird Conservation Act, which has been fought for eight years in eight sessions of Congress, and finally succeeded when the matter of a Federal license, to which objection had been taken, was omitted from the Bill. The Act is a direct sequel to the Migratory Bird Treaty of 1918, for it was found that, useful as that Treaty had been, much of its potential value seemed likely to be lost if provision could not be made for a system of refuges or sanctuaries in the areas traversed by the birds in their migratory flights, and on their wintering grounds. The purchases of such reserve areas demanded large sums of money, and it was to meet this outlay that the Federal license, which proved to be the stumbling-block of the original Bill, was proposed. The difficulty of finance has been removed by proposed State grants. Although the Act makes no appropriation, it authorises a schedule of appropriations amounting in all to some eight million dollars, and settling down after ten years to an annual sum of 200,000 dollars. The first year's sum of 75,000 dollars is to be devoted to a survey of the area to determine the places best suited to become bird-refuges, and, this completed, the selected areas will be purchased and henceforth guarded by an appropriate staff. The American Game Protective Association, which has strongly advocated the proposals of the bill in its bulletin, *American Game*, is to be congratulated on the success of its campaign.

A SPECIAL type of rubber made by the Expanded Rubber Co., Ltd., Wembley Park, and marketed under the trade name of 'Onazote', which appears to have many uses in science and technology, has recently been mentioned in the Press. Onazote is essentially a very spongy form of rubber prepared by vulcanisation under high gaseous pressure, which is sometimes as high as a hundred atmospheres. During the cooling process the pressure is gradually reduced, with the result that the occluded gas expands, forming pockets of air enclosed in thin rubber membranes. Onazote can be prepared with a variety of physical properties by suitably varying the process of preparation. In particular, it can be produced in a hard