anophelines. He thus became recognized as one of the leading medical entomologists of India.

From 1899 onwards James was in correspondence with Sir Patrick Manson regarding the metamorphosis of *Filaria bancrofti*, and in 1900 he was able, quite independently, to trace the larval parasite to the proboscis of the mosquito (*Anopheles*), thereby confirming the discovery of G. Carmichael Low. Henceforward he maintained a close and affectionate connexion with the 'Father of Tropical Medicine'. 1912 and the succeeding year found him in Ceylon investigating the distribution of *Aedes ægypti* with reference to the possible spread of yellow fever, as suggested by Manson, and with this object he visited the Panama Canal.

At the outbreak of the War of 1914–18 James served in Iraq as A.D.M.S. to the Indian Expeditionary Force, and then in 1916 he fell victim to cholera in a well-nigh fatal attack of which he afterwards wrote a vivid personal account. Retiring from the Indian Service in 1918, he joined the Local Government Board (afterwards the Ministry of Health), where he rendered invaluable service as adviser on tropical diseases. He soon established a malaria centre at Horton Hospital, where infected anopheline mosquitoes were maintained for the production of therapeutic malaria, and where many strains of these parasites from Central Europe and Africa were studied. Henceforward there emerged from that institution a series of important researches on the clinical and chemotherapeutic aspects of induced malaria, much of which knowledge has been vindicated during the Second World War. It was fitting that he should become the main prop of the Malaria Commission of the League of Nations at Geneva. In 1922 he was appointed to the Epidemic Commission to Poland and during 1923–27 he took a leading part in inquiries on malaria in Russia, Central Europe and the Near East. In 1929 he was dispatched by the Colonial Office for special work on this disease in Kenya.

Retiring from the Ministry in 1936, James joined the Molteno Institute in Cambridge after the death of his friend, Prof. G. H. F. Nuttall; and then, with P. Tate, in 1938 he startled the protozoological world by the discovery of the exo-erythrocytic cycle of *Plasmodium gallinaceum* of the chick, from which he predicted a similar cycle of development of the malaria parasites of man which has not so far been confirmed. He maintained his interest in his favourite subject to the end, and rendered invaluable service as a member of the Chemotherapeutic Committee of the Royal Society. During 1937–39 he served as president of the Royal Society of Tropical Medicine.

In his numerous writings James adopted a vigorous, forcible and clear style. His main publication was "Malaria at Home and Abroad" (1920). As a speaker he was at all times in demand. His delivery and clear diction were outstanding; in personality he was distinguished by peculiar charm, matched by his neat and polished appearance; in demeanour and deportment he more resembled a cavalry officer than a recondite student, and it was to these attributes, combined with a debonair and engaging manner, that his undoubted successes in international conferences were to be ascribed.

James was elected a fellow of the Royal Society in 1931 and created C.M.G. in 1938. He also received the Prix Darling from the League of Nations in 1934. Apart from his work, his chief recreation was yachting.

P. MANSON-BAHR

Prof. Leon Marchlewski

POLISH science has lost one of its most eminent workers by the death on January 18 of Leon Marchlewski, professor of medical chemistry at the University of Cracow.

Marchlewski was born on December 15, 1869, in Wloclawek, a small town in north-western Poland, near the German frontier. He attended the high school in Warsaw and then studied chemistry in Zurich, graduating there while assistant to the distinguished inorganic chemist Lunge. From this period of co-operation with Lunge date the well-known tables of physico-chemical constants of the commonest acids, prepared by the two together. Marchlewski eventually moved to Manchester, to work with E. Schunck, and under his direction entered the field of organic pigments, which became his chief interest for the rest of his scientific life. After five years with Schunck, Marchlewski became laboratory chief with Claus and Rey in Clayton. Early in the present century he returned to Poland, this time to Cracow in the former Austrian part, as chief of the City laboratory for food analysis. In 1906 he was appointed to the chair of medical chemistry at the University of Cracow, where he remained until the beginning of the Second World War.

Marchlewski's principal scientific interest was organic pigments, and chlorophyll was his main subject of research. He began investigations on chlorophyll in Manchester and continued them in Cracow. He and another Polish chemist, Marceli Nencki, who was working at the same time on hæmoglobin, succeeded in demonstrating the very close connexion between the breakdown products of these two substances. His book "Die Chemie des Chlorophylls", published in 1907, was the fruit of many years of work, and was the first monograph of this field of research. The cramped laboratory conditions in Cracow did not permit Marchlewski to keep abreast of advances in chlorophyll chemistry due to the later work of Willstatter and Hans Fischer, but he continued to make valuable contributions to the subject. Thus in 1912 he isolated from sheep bile phylloerythrine, one of the most important degradation products of chlorophyll, making it possible for Hans Fischer to elucidate definitely the structure of chlorophyll. In the last decade the attention of Marchlewski was directed mainly to the ultra-violet spectra of organic compounds.

Marchlewski was an excellent teacher and lecturer, and influenced the many thousands of medical students in Cracow. He played a very important part in university life and was twice elected rector of the University of Cracow. Since 1936 he had been the vice-president of the Polish Academy of Sciences. For many years Marchlewski was a Polish delegate to the International Union of Pure and Applied Chemistry.

Marchlewski was the son of a landed proprietor; he grew up in the country, retaining throughout his life a keen interest in agriculture, and agricultural problems were his main preoccupation apart from chemistry. He was the organiser and first director of an agricultural research institute in Puławy. He was for many years supervisor of big estates in the Tatra mountains, owned by the nation and later incorporated in the Polish National Park. He was supervisor of the country estates belonging to the Polish Academy of Sciences in central and east Poland, which before the War provided financial

support for the Academy. Marchlewski's interest in agricultural problems accounted to some extent for his political leanings; for he took an important part in the Polish Peasant Party and was elected as representative of the party in the Upper House.

Marchlewski spent the first months of the War in Lwow, under Russian occupation, and so avoided arrest and deportation to the concentration camp at Oranienburg-Sachsenhausen, which was the fate of most of his fellow professors in Cracow after the German entrance into the city. Although living under miserable conditions he wrote his last work, a text-book on physiological chemistry, for he still wished to devote the last resources of his skill to the rising generation of students. Death has prevented him from helping to re-build Polish scientific life.

BOLESŁAW SKARŻYŃSKI

WE regret to announce the following deaths:

Mr. H. B. Maufe, formerly director of the Geological Survey of Southern Rhodesia, on May 8, aged sixty-six.

Dr. E. B. R. Prideaux, formerly reader in inorganic and physical chemistry in University College, Nottingham, on May 8.

NEWS and VIEWS

Royal Society: New Foreign Members

AT a meeting of the Royal Society on May 9, the following were elected to the foreign membership of the Society: Dr. Herbert Spencer Gasser, director of the Rockefeller Institute for Medical Research in New York; Prof. Frédéric Joliot, head of the National Centre of Scientific Research in Paris; Prof. Theodor von Karmán (Pasadena), professor of aeronautics and director of the Guggenheim Aeronautics Laboratory at the California Institute of Technology; Prof. Erik Andersson Stensiö, professor in the University of Uppsala and director of the Riks Museum, Stockholm.

Royal Geographical Society: Awards for 1945–46

THE Royal Geographical Society has announced its medal and other awards for 1945–46:

The King has approved the following awards: Founder's Medal for 1945 to Dr. Charles Camsell, Deputy Minister of Mines and Resources, Canada; chairman, Northwest Territories Council, and president of the Canadian Geographical Society; for his contributions to the geology and geography of the Canadian north and his work in advancing geographical science in the Dominion; Patron's Medal for 1946 to Sub-Inspector Henry A. Larsen, of the Royal Canadian Mounted Police, for his achievement of the North-West Passage in the *St. Roch* from west to east in 1940–42, and from east to west in one season in 1944; Founder's Medal for 1946 to Brigadier Edward A. Glennie, director of the Survey of India, for his work on geodesy in India and his contributions to mapping in the Far East.

The Council of the Society has made the following awards: Victoria Medal for 1946 to Prof. H. J. Fleure for his distinguished service in the advancement of geographical education and his valuable researches into the human aspects of geography; Murchison Grant for 1945 to Lieut.-Colonel W. E. Browne for his work on geodetic survey, and in extending triangulation over long distances at sea; Murchison Grant for 1946 to Lieut.-Colonel C. A. Hart for his work on the application of radar to air survey; Back Grant for 1946 (two years' income) to J. W. S. Marr for his work in connexion with the *Discovery* investigations and his memoir on the South Orkney Islands; Gill Memorial for 1945 to Commander K. E. Oom, Royal Australian Navy, for surveys on the coast of New Guinea during 1942 and 1943 and for subsequent surveys as head of the Australian Hydrographic Department; Gill Memorial for 1946 to Wing-Commander D. C. McKinley as organiser and leader of a series of flights to the north magnetic and north geographical poles in May 1945 in the Empire Air Navigation School aircraft *Aries*.

Institution of Mining and Metallurgy: Awards for 1946

THE Gold Medal of the Institution of Mining and Metallurgy, the highest distinction in the Institution's gift, has been awarded to Mr. Carl Davis, past-president, director and London agent of the Anglo-American Corporation of South Africa, Ltd., in recognition of his services to the gold mining industry in South Africa and West Africa, to mining in Northern Rhodesia, and to mining education. Honorary membership of the Institution has been conferred on Dr. J. G. Lawn, past-president, director and consulting engineer, Johannesburg Consolidated Investment Co., Ltd., in recognition of his services to the Institution as honorary treasurer during 1938–46. The Consolidated Gold Fields of South Africa, Ltd. Gold Medal and Premium have been awarded to Mr. G. Hildick-Smith, manager of Modderfontein B. Gold Mines, Ltd., for his paper on "Shaft Pillars and Shaft Spaces", published in the *Transactions* of the Institution.

American Upper Air Cosmic Ray Expedition

THE National Geographic Society, the United States Army Air Force and the Bartol Research Foundation will jointly conduct a series of four round-trip flights in a specially equipped *B*-29 bomber to investigate the variation with latitude and longitude of cosmic ray intensities. The flights will extend between lat. 50° N. and the magnetic equator, some 20° south of the geographic equator; and studies will be made at altitudes of 5,000, 15,000, 25,000 and 35,000 ft. The trips will not necessarily be continuous, and parts of each flight may even be made at different levels so long as complete round trips at each of the four altitudes can be pieced together. The principal apparatus to be carried in the plane, consisting of multiple banks of Geiger counters, has been designed by Dr. W. F. G. Swann, director of the Bartol Research Foundation. The counters are so arranged that they will record only the particles which move downward vertically. It is hoped to discover the pattern of cosmic ray intensity in a cross-section of the atmosphere extending 4,800 miles northward from the magnetic equator, and reaching from sea-level more than 6½ miles high, and so learn more about the nature of the primary particles entering the atmosphere and breaking down there to