Anniversary Meeting of the Royal Society.

SIR F. GOWLAND HOPKINS delivered his first anniversary meeting address as president of the Royal Society on Nov. 30. Referring to the Society's activities during the past year, Sir Frederick remarked that the Council is well satisfied with the change of policy initiated last year, whereby it was decided to expend accumulated trust funds on the active support of current fundamental researches. While the Council no longer has accumulated funds at its disposal, it is proposed to do all that is financially possible in support of individual research.

This year the following grants have been made: From the Messel Fund: £800 a year for five years to Dr. Honor B. Fell, of the Strangeways Research Laboratory, for the support of her valuable work on tissue culture; also £150 for the current year, and, after the termination of his 1851 Exhibition Scholarship, £600 a year for two years, to Dr. M. L. Oliphant, of the Cavendish Laboratory. From the Caird Fund: £2200 to Prof. O. W. Richardson for the purchase of optical apparatus of high resolving power. From the Donation Fund: £400 to Dr. L. S. B. Leakey towards the cost of his East African Archæological Expedition. From the Darwin Fund: £500 a year for four years to Mr. C. S. Elton for research on wild vole populations, together with an additional grant of £250 for capital outlay and field equipment. Dr. S. Adler's researches on kala-azar continues to receive support from the Anonymous Bequest Fund.

During the year the Society has received three bequests—£10,000 under the will of Sir Otto Beit, £3000 from the estate of Dr. A. Muirhead, and about £250 from that of Dr. C. W. Andrews. These bequests were left without restrictions, and have been added to the General Fund.

Sir Frederick also stated that arrangements have been completed with the University of Cambridge for building and equipping a cryogenic and magnetic research laboratory at Cambridge, towards which the Royal Society is contributing £15,000. The laboratory will be known as the "Royal Society Mond Laboratory" as an acknowledgment that the Society was able to forward the enterprise through a benefaction received from Dr. Ludwig Mond.

We print below extracts from the remarks made by the president in bestowing the Society's medals.

Presentation of Medals.

COPLEY MEDAL, AWARDED TO SIR ARTHUR SCHUSTER.

Sir Arthur Schuster was the first to show the important information to be got by measuring quantitatively the magnetic deflection of cathode rays. He showed how, by combining this measurement with the potential difference which generates the rays, it was theoretically possible to determine without ambiguity the velocity, and the ratio of charge to mass, of the particles constituting the corpuscular stream. We owe to him other almost equally fundamental contributions to the study of electric discharge in gases. Thus, he showed that the passage of a luminous discharge put the gas temporarily into a conducting state, due to the presence of charged ions: these ions were able to diffuse into a space screened from the discharge by a wire gauze partition, and they could then be put into evidence by showing the conductivity of the gas under electromotive forces of a fraction of a volt. Sir Arthur was the first to show by experiment that in Crookes's radiometer the reaction was not on the sun but on the glass case of the instrument, thereby connecting the action with the residual gas. He has also made many important contributions to terrestrial magnetism. In spectroscopy he formulated independently the Rydberg-Schuster law. He invented the periodogram method of looking for periodicities in statistical material, a method which has been widely adopted by workers in many branches of inquiry, extending even into economics.

ROYAL MEDAL, AWARDED TO SIR RICHARD GLAZEBROOK.

For fifty years Sir Richard Glazebrook has been closely identified with research on physical standards, and particularly electrical standards. For many years he conducted researches associated with the absolute measurement of resistance, current, and inductance, and the results of this work is reflected in the present remarkable accuracy of electrical measurements. The name of Sir Richard Glazebrook is also world-known on account of his directorship of the National Physical Laboratory; it is largely due to his influence on the researches at that Institution that aeronautical science has made such vast progress. Physical science is also indebted to him for that great work, the "Dictionary of Physics", and in international science he has played a conspicuous part.

ROYAL MEDAL, AWARDED TO PROF. W. H. LANG.

Prof. Lang's work on the fossils of the Old Red Sandstone is of high scientific importance. It has led to the discovery and description of a new and unexpected group of plants in which root, stem, and leaf are not differentiated. For the first time it thus becomes possible to trace in a circumscribed group the probable origin of these structures from a source in which they did not exist as distinct members. The work was begun in collaboration with the late Dr. Kidston, and continued by Prof. Lang after the death of his colleague in 1924. Prof. Lang's previous intensive studies on the morphology of the liverworts and ferns had eminently fitted him to provide a morphological point of view which has given most important results.

DAVY MEDAL, AWARDED TO PROF. A. LAPWORTH.

Prof. Lapworth's work has been largely concerned with the application of physical methods to the investigation of the reactions of organic chemistry. His study of the bromination of acetone yielded results of primary importance in relation to the reactivity of carbonyl compounds and has formed the basis of many subsequent investigations. His researches on the addition of hydrocyanic acid to organic compounds, besides leading to results of theoretical and synthetical importance, made clear the mechanism of the formation of cyanhydrins. His investigations of the effect of small quantities of water in diminishing the activity of acids in alcoholic solution indicated the existence of the oxonium ion and added considerably to our knowledge of catalysis by acids. Among his more notable synthetical achievements are the synthesis of zingerone, derived from the pungent principle of ginger, and of homocamphor. His work on the mutual influence of groups in the same molecule, his recognition of induced alternate polarity, and his classification of reagents as anionoid or kationoid have played an important part in the development of the present state of knowledge of the reactivity of organic compounds.

SYLVESTER MEDAL, AWARDED TO PROF. E. T. WHITTAKER.

Prof. E. T. Whittaker is one of the best known of British mathematicians, his work showing extraordinary versatility. He has written five books, on entirely different subjects, and numerous papers which touch on almost every branch of mathematics. All his books show, besides their more technical qualities, powers of arrangement and exposition of a most unusual order; and the "Modern Analysis" and "Analytical Dynamics" have had a considerable influence on mathematical thought. Prof. Whittaker has made important additions to the theory of the solution of differential equations, ordinary and partial, by definite integrals; to the theory of Lamé and Mathieu functions, the functions of the elliptic and parabolic cylinders, and the integral equations associated with them; to the theory of interpolation; and to the theory of the solution of dynamical problems by trigonometrical series. He has also in recent years made a number of interesting contributions to the pure mathematics of relativity, electromagnetism, and quantum theory.

HUGHES MEDAL, AWARDED TO PROF. W. L. BRAGG.

Prof. Bragg's recognition of the fact that the Laue diffraction spectra could be considered as produced by reflection from the planes of the crystal lattice, besides being a great simplification of a difficult geometrical problem, was the starting-point of two important and fruitful lines of physical investigation, namely, the measurement of X-ray wave-lengths and the elucidation of crystal structure. Work on the first of these led to Moseley's discoveries and their subsequent developments. Bragg's concentration on the second has resulted in a wonderful extension of our knowledge of the structure of crystals, both simple and complex, and of inter-atomic distances and linkages. His work may truly be said to have laid the foundations of a chemistry of the solid state.

The Wellcome Research Institution.

ON Wednesday, Nov. 25, Lord Moynihan of Leeds, president of the Royal College of Surgeons, laid the corner stone of the new buildings for the Wellcome Research Institution, which are to occupy a site at the corner of Euston Road and Gordon Street, immediately north of University College.

The architect is Mr. Septimus Warwick, F.R.I.B.A., who has designed the building to meet the requirements of the different research laboratories and museums. The building materials are practically all of British origin.

Lord Moynihan, in the course of his remarks, outlined the development of the various research laboratories and museums founded by Dr. Wellcome, who, in the year 1894, founded his laboratories for physiological research, which were followed two years later by laboratories for chemical research.

On the recapture of the Sudan by Kitchener, Dr. Wellcome was one of the first civilians to visit that country, and he there saw, and for some time watched, conditions as they then were; and he found great opportunities for public service. It was in the year 1899 that he founded the Tropical Research Laboratories in Khartoum, the first director of which was Sir Andrew Balfour, who served there for twelve years. Attached to that research institute was a floating laboratory, which cruised through all the waterways of the Nile within reach, giving the opportunity there for continued research, and for carrying the benefits of research to the people who live far south.

Dr. Wellcome's activities continued also in Great Britain. In the year 1913 he established the Bureau for Scientific Research, and the Historical Medical Museum. In 1914 he established the Museum of Medical Science, including Tropical Medicine and Hygiene, and in 1920 he founded the Entomological Field Laboratory. All these institutions, or many of them, suffered, however, under one great disadvantage, which all research students will appreciate at once: they were separate from one another, giving no opportunity for that hour to hour, or minute to minute, consultation which is one of the great advantages of having collective research under one roof; but from to-day we see the possibility of that being altered. Under the roof of the Wellcome Research Institution the following subjects are to be studied: medical zoology, parasitology, entomology, tropical medicine and hygiene; there will be physiological and chemical research laboratories, the historical medical museum, and a museum of modern medicine. It will be agreed that this is a formidable and very impressive list. Dr. Wellcome's activities, however, have not been confined to Great Britain. He also gave great help towards the foundation of the Gorgas Memorial Laboratory, near the Panama Canal.

One of the conspicuous features of Dr. Wellcome's life-work has been at once its relevance and its opportunism. In all his investigations of tropical diseases he begins in an almost virgin country, and the harvest gathered has been such that not only have many lives been spared and much suffering saved, but also vast tracts of country have, for the first time, been made fit for human habitation.

At home, as all of us will agree, the great need of medicine to-day lies in the direction of increasing the opportunities for medical research, and not less in the opportunities for creating those competent to undertake medical research. Physical observation alone, from the time of Hippocrates through our great students, Sydenham, Addison, and James Mackenzie, has revealed many secrets which have been so long hidden in connexion with diseases that lay within the orbit of pure investigation, and the conquests of mere observation have been innumerable and of a value beyond all reckoning. Upon it a virile and beneficent art has found its opportunities extended and its thought affected by the encouragement and adoption of methods which are seeking to change a practical art into an applied science. Difficulties, of course, have been found all along the way, but experiment in medicine is for ever inevitable.

As a result of experiment in medicine we are, happily, gradually replacing anatomy by physiology, and if disease is, in many respects, merely altered function, then we are about to create a science, new to the human race, of comparative function in health and in disease. But experiment has done even more for us than that. It has strengthened the arm of medicine, and it has made the tests more severe for the acceptance of evidence which has been derived by the methods of observation.

Medicine depends, of course, not only for its present stability but also for its future advance, upon a large number of ancillary sciences. Those sciences are to be studied in the new building. The effect, therefore, on medicine will be considerable, but it is hoped something better even than that will come out of the work