

in 1929. His work has been mainly concerned with the physics of chemical defence problems, in which field his fundamental studies on the mechanism of the break-up of liquid drops and the formation of aerosols has contributed materially to present-day knowledge. His ingenious microburette for accurately delivering small drops of known size has now become a well-known instrument which is used in laboratories all over the world.

DR. J. G. NAGELSCHEIDT, of the Safety in Mines Research Establishment, is a mineralogist of international reputation and is now engaged on research into the mineralogical aspects of pneumoconiosis. He has been a pioneer in the application of X-ray diffraction techniques to the study of clay materials, in the application of new mineralogical techniques to the study of dusts responsible for lung disease, and in the application of the electron microscope to the study of clay minerals and dusts. He has developed and is still developing new techniques for the quantitative mineralogical analysis of small dust samples and for the identification of particular mineral particles too small for identification with the optical microscope. He is a member of the Industrial Pulmonary Diseases' Committee of the Medical Research Council and is secretary of the Subcommittee on Dust.

DR. H. H. M. PIKE joined the staff of the Research Department, Woolwich, now under the Ministry of Supply, in 1932, his early work being concerned with the internal ballistics of guns. More recently he has turned his attention to the study of the phenomena occurring during the detonation of high explosives, and his findings are the basis of civil defence teaching in connexion with the effects of blast on buildings.

MR. J. S. PRESTON has been at the National Physical Laboratory for the past twenty-five years and was at first concerned with the development of photometric and radiometric methods of measurement. Through his work a standard design for commercially produced photo-emissive cells for precision photometry has been adopted. Later his attention was attracted to selenium cells, and he undertook investigations into their use in physical photometry; but the wide divergence between the theory and their practical behaviour led to a detailed investigation into the fundamentals of the constitution of rectifying contacts. This in turn was followed by work on the deposition and properties of a wide variety of thin films, and in this connexion the most recent development is the discovery of the technique necessary for the deposition on glass of a transparent electrically conducting metallic film of low resistance; this will have considerable practical value, as an electric current passing through the film will generate sufficient heat to prevent the deposition of moisture. Mr. Preston was the general secretary of the International Commission on Illumination during 1932-49.

DR. J. THOMLINSON joined the Royal Aircraft Establishment, Ministry of Supply, in 1939, where his work has been directed to the problems connected with the landing and take-off of aircraft from ships at sea and from confined spaces on land. He carried out the first known fundamental investigation into the performance of arrester gears used in deck landings of aircraft, and he originated and has since been responsible for the development of the flexible deck system for landing high-speed aircraft.

MR. C. K. THORNHILL entered the Ministry of Supply in 1940 and has been attached to the Arma-

ment Research Establishment since 1943. Throughout this period he has worked with conspicuous success on mathematical problems connected with guns and explosions. His contributions to the field of gun erosion were recognized by the United States Government in 1947 by the award of the American Medal of Freedom.

MR. J. H. WHITAKER, who joined the Royal Aircraft Establishment, Ministry of Supply, in 1936, is a mechanical engineer and has made valuable contributions in many fields. He became a recognized authority on aircraft fuel and oil systems during the Second World War and has since been responsible for the development of essential components for guided missiles.

PHYSICAL SOCIETY

ANNUAL GENERAL MEETING

AT the annual general meeting of the Physical Society, held at the Royal Institution on May 20, the reports of the Council and of the honorary treasurer and the accounts and balance sheet for 1951 were presented and adopted. The officers and Council for 1952-53 were elected (see *Nature*, June 14, p. 995). At the extraordinary general meeting held immediately prior to the annual general meeting, Profs. Otto Hahn and M. T. von Laue were elected to honorary fellowship of the Society, and certain changes in the articles of association of the Society, which would make the procedure of election of officers and Council more democratic, were agreed to be submitted to the Board of Trade for approval.

During 1951, the Council reports, the membership rose to 2,025 and the activities of the Society again increased. It is gratifying to note that the decline in recent years in the number of newly elected Fellows has been arrested and that there have been substantial increases in both the studentship and fellowship grades. The work of the Society has been considerably hampered by rising costs of publication and shortage of paper, and the Council has given earnest consideration to the possibility of effecting economies and increasing efficiency. A scheme for introducing a reduced basic subscription for membership of the Society, with separate payment for all publications, has received considerable support and it is likely that some such scheme will be adopted for operation in 1953. Closer collaboration has been effected between the Society and the Institute of Physics, and members now receive notice of meetings of the Institute, which they are invited to attend. They may also obtain one of the Institute's two journals at a reduced subscription-rate.

In addition to nine science meetings held in London during the year, a two-day meeting was held at University College, Southampton, and three-day meetings at University College, Swansea, and at the Queen's University, Belfast. In April a *conversazione* for members and their friends was held in the rooms of the Royal Society and the Royal Geographical Society. The seventeenth Thomas Young Oration was delivered by Prof. W. D. Wright, who spoke on modern problems in colorimetry; the thirty-fifth Guthrie Lecture by Prof. N. F. Mott, on the mechanical properties of solids; and the 1951 Parsons Memorial Lecture by Mr. F. Twyman, on Sir Charles Parsons and optical engineering. Sir Thomas Merton

was the recipient of the sixth Holweck Medal of the Société Française de Physique and the Holweck Prize of the Physical Society; the presentation took place on May 15 at the Salons de l'Université à la Sorbonne, Paris, when Sir Thomas delivered the Holweck Discourse on the subject of new methods of making diffraction gratings. Sir George Simpson received the sixth Charles Chree Medal and for his address gave reminiscences of fifty years work in geomagnetism and geophysics. The twenty-eighth Duddell Medal was presented to Dr. A. B. Wood, who gave an account of his work on underwater acoustics, and the seventh Charles Vernon Boys Prize to Dr. J. H. E. Griffiths, who discussed ferro-magnetic resonance.

Details of the activities of the four Groups of the Society, the Colour, Optical, Low Temperature and Acoustics Groups, together with a list of the numerous bodies on which the Society is represented, are given in the annual report. In addition to science meetings, the Low Temperature Group held two major conferences—the Oxford Conference on Low Temperatures, and the Eighth International Congress of Refrigeration, in London. The Acoustics Group took an active part in the establishment of *Acustica*, and also in the general arrangements of the Acoustics Division of the Building Research Congress held in London during September.

The honorary treasurer again directs attention to the dependence of the financial structure of the Society on the success of the annual exhibition, which, although it had a record attendance and was of high standard, nevertheless resulted in a much smaller financial benefit to the Society than in the previous year. Thus the Society only just paid its way during 1951, and the future outlook depends very largely on the extent to which costs continue to rise. However, with the continued support of its members and with the suggested modifications in the form of subscriptions, it is hoped that the financial position of the Society may be made secure without curtailment of publications or activities.

MARINE BIOLOGY IN SCOTLAND REPORT FOR 1950-51

THE annual report and collected reprints (Nos. 57-87) of the Scottish Marine Biological Association for the year 1950-51* have recently been published. A study of this volume leaves no doubt that the Association's Millport Laboratory is working most successfully and at very high pressure. The scientific staff now numbers nine (excluding the Director), and their researches cover many fields, including plankton investigations, a re-survey of the fauna of the Clyde Sea Area, the life-history of barnacles, the factors governing barnacle settlement and their relationship with those governing other settling organisms, the operation of fishing trawls, oyster culture and marine algology. Of special interest and importance is the initiation of experiments in underwater television, for which a special grant has been obtained from the development fund of the Association. A new device for measuring the depth at which gear is working in the sea is also being developed. Already this apparatus can be used to a depth of 200 m. with an accuracy of ± 2 per cent in continuous readings on deck.

* Scottish Marine Biological Association. Collected Reprints, 1951: Nos. 57-87. (Millport: Marine Station, 1952.)

To improve facilities at the Station, a new two-story building with a reinforced concrete seawater storage tank on its roof is being built. The masonry of some extra research rooms, and a new workshop and store are mainly completed. Reconstruction of the aquarium is about to be put in hand. Certain administrative changes have also been made by which the Director of the Station acts also as Secretary to the Council—an arrangement that should bring about increased efficiency and smoother running of the whole establishment.

The Oceanographical Laboratory at Leith now comes under the administration of the Association, a special sub-committee of which has been nominated to advise on matters of scientific policy. The programme of research follows two main lines—plankton recorder surveys and investigations into the relationship between the herring and its environment during the Scottish summer fishery at Fraserburgh. During the year some thirty thousand miles of recorder sampling was carried out, the analysis of which must alone be a huge undertaking.

Until lately the Leith laboratory was administered by Hull University College and its reports published as *Hull Bulletins of Marine Ecology*. It is intended to continue their publication in the same format but under a suitably modified title such as *Bulletins of Marine Ecology*.

The Laboratory's present accommodation at Leith and Edinburgh is unsatisfactory and inadequate; but negotiations are now proceeding for the purchase of a property in Edinburgh which, when converted and equipped, will be more suitable.

COLONIAL DEVELOPMENT AND WELFARE

DETAILS OF SCHEMES FOR THE YEAR 1951-52

THE schemes detailed in the latest return made under the Colonial Development and Welfare Acts, covering the period April 1, 1951-March 31, 1952*, bring the total commitments for development and welfare schemes under the Acts to £83,983,947, of which £16,038,184 is for the year in question, and for research schemes to £10,745,100, of which £868,851 is for the year ended March 31, 1952. Of this, £373,826 is for agriculture, £136,803 for medicine, £109,804 for social science, £70,575 for tsetse and trypanosomiasis research, £42,778 for insecticides research, £42,045 for fisheries research, £38,050 for locust control and £9,100 for products research. There are no grants for research fellowships, and only £1,420 for economic research.

Of the actual research schemes, the largest are £97,220 for the establishment of the West African Institute of Social and Economic Research, covering capital and recurrent expenditure during July 1, 1951-March 31, 1956, £70,600 as supplementary provision for four and a half years for the establishment of a West African Rice Research Station at Rokupr, Sierra Leone, and £95,000 for the establishment of a Veterinary Research Laboratory and ancillary facilities in the Federation of Malaya. Pilot

* Colonial Development and Welfare Acts. Return of Schemes made under the Colonial Development and Welfare Acts by the Secretary of State for the Colonies with the Concurrence of the Treasury in the period from 1st April, 1951, to 31st March, 1952. (Cmd. 211.) Pp. 44. (London: H.M.S.O., 1952.) 1s. 6d. net.