

SCIENTISTS IN THE PUBLIC SERVICE

SPECIAL PROMOTIONS

AS in previous years a number of special posts has been created in the Scientific Civil Service under the provisions included in the White Paper on the Scientific Civil Service (Cmd. 6679, 1945) to provide for the promotion of individual research workers of exceptional merit. The promotions were effective from July 1 and include the following :

Deputy Chief Scientific Officers

DR. L. J. BELLAMY, who is superintendent of Analytical Services at the Ministry of Aviation's Explosives Research and Development Establishment, Waltham Abbey, entered Government service in 1939 and undertook various analytical jobs until he was posted to the Directorate of Chemical Inspection, Woolwich, in 1945. Here he became responsible for the development of new methods of analysis, particularly physical methods, and became a member of the World Health Organization Expert Advisory Committee on Insecticides. In 1955 he was transferred to his present post, where he has been responsible for the development of new analytical methods, research and assessment on the stability and compatibility of explosives, X-ray and electron microscopy techniques and polymer synthesis and properties. Dr. Bellamy's major personal contributions have been in the fields of the interpretation of the spectra of large molecules, solvent effects, and more recently on the difference in the associative properties of protons and deuterons. On the interpretation of spectra of large molecules, Dr. Bellamy has developed a broad theory, whereby the behaviour of the more important group frequencies can be predicted and understood. This has revealed new relationships between frequency shifts and other physical properties. On solvent effects, his work has led to a better understanding of inter-molecular forces in solution.

DR. A. F. GIBSON is leader of the Semiconductor Physics Research Division at the Royal Radar Establishment of the Ministry of Aviation at Malvern, and has been associated with that establishment since 1944. Dr. Gibson's work has included luminescence, infra-red photo conductors, transistor physics and research of a fundamental character on the properties of semiconductors. He has applied his research to practical needs and has been responsible for the development of a new form of far infra-red and millimetre wave detector, based on cyclotron resonance and an avalanche injection diode of value in fast-switching circuits. He has carried out investigations of the microwave properties of germanium and the effect of carrier injection and extraction on the absorption. Dr. Gibson's most recent work has been concerned with 'hot' electrons in germanium, which has shown the complex nature of the processes whereby energy given to electrons in a semiconductor by an electric field is exchanged with the lattice to give ohmic heating and how, when this cannot be done sufficiently rapidly, the energy is spread unequally among the various 'valleys' in momentum space. Similar investigations carried out with 'holes' have led to a better understanding of the band structure of the complex valency band of germanium.

Senior Principal Scientific Officers

DR. J. M. BURCH, of the National Physical Laboratory, specializes in metrological optics, particularly in the production and application of photographic gratings. These gratings are of two kinds: large photographs of very closely spaced interference fringes for spectroscopic purposes, and gratings for linear and radial measurement based on the improvement of conventional rulings by methods of 'photographic averaging'. Gratings, read by optical and electronic methods to which Burch has also made important contributions, are now being extensively used in the control of machine tools and in metrology. Dr. Burch has recently taken charge of a research project concerned with the development and application of optical masers.

PROF. J. C. COOKE, one-time professor of applied mathematics in the University of Malaya, is now working on fluid dynamic theory in the Aerodynamics Department at the Royal Aircraft Establishment, Farnborough.

DR. D. A. L. DAVIES, attached to the Immunology Chemistry Section of the War Department's Microbiological Research Establishment at Porton, is concerned with work on the isolation and structure of bacterial antigens. His work has laid the basis for a chemical and immunological approach to tissue-cell antigens.

MR. D. FIRTH is now in charge of the work of the Fluid Power Section of the National Engineering Laboratory concerned with research into oil hydraulic and pneumatic devices for general industrial use. Earlier this year Mr. Firth won the Wolfe Award for his work on hydrostatic transmissions.

MR. J. F. GITTINS, of the Services Electronics Research Laboratory Extension, run by the Admiralty at Harlow, has undertaken research in the field of high-power microwave valves, particularly of the travelling-wave variety. This has led to the use of the travelling-wave tube as an effective high-power amplifier at microwave frequencies. Mr. Gittins is also chairman of the Power Valve Research Advisory Panel of the Co-ordination of Valve Development Committee.

MR. B. E. J. PAGEL is in charge of the Astrophysics Department at the Royal Greenwich Observatory. In addition to carrying out theoretical and observational research Mr. Pagel has also assisted in the design of new apparatus and introduced improved techniques.

DR. G. B. PRESTON, of the Royal Military College of Science, Shrivenham, has been engaged in research in the field of pure mathematics, particularly in the theory of semi-groups.

DR. J. T. STUART, of the Aerodynamics Division, National Physical Laboratory, has made contributions to the study of the stability of fluid flow. Of particular significance is his research work into the non-linear theory of hydrodynamic instability, the growth of wave disturbances and the effects of Reynolds stresses on transition from laminar to turbulent flow.

DR. R. H. WOOD is in charge of that part of the Building Research Station research programme that

deals with structural engineering design problems; his particular interest is the structural interaction between the various elements of construction in multi-storey framed buildings. This interaction, or mutual stiffening of the parts of a building so as to strengthen the whole, has an important influence on building design, and Dr. Wood's work has contributed greatly to the understanding of the structural behaviour of complete buildings and to the more efficient allowance for composite action in structural design.

Similar promotions have been made by:

(1) United Kingdom Atomic Energy Authority:
Senior Principal Scientific Officers

MR. J. C. MARTIN has worked at the Atomic Weapons Research Establishment, Aldermaston, since its foundation in 1953. His early work was concerned first with small-scale explosives research, investigating the motion of fluid surfaces and later with the development and use of scintillation counters. More recently he has worked on neutron sources and on the development and application of sub-microsecond radiographic techniques for the experimental work on explosions. Starting with an early prototype 35-MeV. linear accelerator for which he developed a double focusing system, he has brought it to a state of output and reliability which has made it a valuable tool in the solution of certain hydrodynamic problems. He is now attempting to extend the flash X-ray technique from its present limit in the region of 1 MV. up to about 6 MV. He has contributed a number of original ideas in the field of advanced nuclear and thermo-nuclear weapons.

DR. J. B. TAYLOR has worked at the Atomic Weapons Research Establishment, Aldermaston, for six years. He contributed first to the improvement of neutronic calculations used in the theory of explosions and in the computation of the stochastic behaviour of small populations in a supercritical system. He then carried out a number of investigations, ranging over several fields and at all levels of detail, to illuminate and help to direct the astrophysical engineering behind the megaton test series of 1957-58. He later worked on problems connected

with fast reactors and on electromagnetic phenomena from explosions, before turning to problems of the thetatron and other controlled thermonuclear reactors.

(2) Agricultural Research Council:
Deputy Chief Scientific Officer

DR. R. MARKHAM joined the staff of the Plant Virus Research Station, Cambridge, now the Agricultural Research Council Virus Research Unit, in 1940 and became director of the Unit in 1960. His research has been concerned mainly with the biochemistry of the smaller plant viruses, and in 1949 he was able to demonstrate that the ribonucleic acid of the turnip yellow mosaic virus, which he and Dr. Kenneth Smith first isolated and purified, was necessary for the infectivity of the virus and was enclosed in a protective shell of protein. This work led to an intensive investigation of nucleic acids in general and resulted in the development of a large number of delicate methods for the analysis of nucleic acids and their constituents. It also led to an understanding of the way in which some of the enzymes which degrade nucleic acids, particularly pancreatic ribonuclease, act. Dr. Markham has also been concerned with synthetic mechanisms by which small polynucleotides can be made. He was elected a Fellow of the Royal Society in 1956.

Senior Principal Scientific Officers

DR. C. H. CADMAN is head of the Virology Department, Scottish Horticultural Research Institute, Mylnefield, Dundee, and is at present particularly concerned with the transmission of plant viruses by nematodes.

DR. B. KASSANIS, of the Plant Pathology Department, Rothamsted Experimental Station, has discovered and described a number of viruses, and recently discovered that the multiplication of the virus depends on the simultaneous multiplication of another.

DR. A. KLECZKOWSKI, of the Plant Pathology Department, Rothamsted Experimental Station, is primarily a serologist, but has made substantial contributions to a range of subjects, and is now studying the surface structure of the protein units which make up tobacco mosaic virus.

THE ROYAL SCOTTISH MUSEUM

By Dr. D. A. ALLAN, C.B.E.

Formerly Director

THE foundation stone of the Royal Scottish Museum was laid by the Prince Consort in October 1861, and thereafter there arose in instalments the Venetian Renaissance building which now occupies more than half of Chambers Street, west of the Old College, University of Edinburgh. It is a grey stone structure consisting of a central block elongated east and west, with two wings stretching southwards. The area within was afterwards built on to yield a series of rectangular halls, most of them with a main ground-floor surmounted by two balconies, the earlier ones supported on cast-iron pillars, the later either cantilevered or upheld by ferro-concrete structures. A 'grand staircase' was added at the rear in 1931, with arches at its mezzanine landings to lead to a prospective future block. A lecture hall had been

included in the earliest part of the building but was later sacrificed to yield much-needed exhibition space, yet the necessity for a hall for lectures and demonstrations and later to provide educative film shows was ever present, and just before the Second World War foundations were dug beyond the 'grand staircase' for a rectangular lecture hall . . . and were left to be obliterated by ashes from the boilers. In May 1959 work was commenced on a theatre block of an entirely novel design, and its completion was achieved early in September 1961, the opening ceremony being performed by the Right Hon. the Earl of Rosse, chairman of the Standing Commission on Museums and Galleries, with the Right Hon. John Scott MacLay, H.M. Secretary of State for Scotland, in the chair.