

Flying Corps and worked as an investigator of accidents caused by mechanical failures. For this work he was mentioned in dispatches and was made M.B.E.

On returning to Dundee, he continued his researches on stresses in materials and received the degree of D.Sc. in due course. He was appointed professor of

engineering and drawing in University College, Dundee, in 1920, and held this post until he retired in 1946. During 1939-46 he was also principal of University College, Dundee. In both posts he was highly respected by his colleagues for his academic abilities, for his powers as an administrator, and for his sincerity. J. DICK

NEWS and VIEWS

Zoology at Cambridge :

Sir James Gray, C.B.E., F.R.S.

SIR JAMES GRAY, who is to retire from the chair of zoology at Cambridge in September, has been one of the chief architects of the structure of modern British zoology. He and the men and women he has trained have been largely responsible for the growth of experimental zoology and for the replacement of comparative anatomy by studies of the living animal in zoological laboratories throughout the Commonwealth. After serving with distinction in the First World War, he returned to Cambridge as Balfour student and then as reader in experimental zoology; his cytological researches during this period culminated in the publication of "Ciliary Movement" in 1928 and "A Textbook of Experimental Cytology" in 1931. The design and building of the new zoology laboratory at Cambridge during 1932-34 provided him with his first major administrative task and it is a tribute to his skill that few people who work there to-day would wish to change the building. He was appointed to the chair in 1937 at a time when his interests were moving away from cytology to the analysis of animal movement, and he pioneered the application of physical principles to many different aspects of this study. Until after the Second World War his work was perhaps not widely known to the world at large, but this was remedied in 1951 by a series of Christmas Lectures at the Royal Institution, which were afterwards published under the title "How Animals Move". Before, and even more after, the War he has been active in the wider spheres of administration, being president of the Marine Biological Association, twice on the Council of the Royal Society, a member of the Agricultural Research Council during 1942-47 and for many years a development commissioner and chairman of the Advisory Committee on Fishery Research. This year he is president of the British Association. As editor, almost from its inception until 1954, of the *Journal of Experimental Biology* he has made a notable contribution to clarity in the publication of scientific results. Altogether, his influence will continue to be felt in his subject for many years.

Prof. C. F. A. Pantin, F.R.S.

DR. C. F. A. PANTIN, who has been elected to succeed Sir James Gray as professor of zoology in the University of Cambridge, has been reader in invertebrate zoology in the University since 1937. After taking his degree from Christ's College, Cambridge, he was physiologist to the Marine Biological Laboratory, Plymouth, during 1922-29, and returned to Cambridge as Harding Lecturer and Fellow of Trinity College in 1929. His researches have ranged over a wide field of invertebrate zoology. During 1923-31 he published a series of papers which laid

the foundation of our knowledge of amœboid movement; in 1931 he established the role of calcium in the osmotic regulation of the body fluid of the marine worm *Gunda* (*Procerodes*). His analysis during 1934-36, of the physiology of crustacean muscle was the starting-point for extensive subsequent work on this tissue; at this time also he became interested in the Coelenterata, the neuromuscular physiology of which he has continued to clarify in a series of papers since that date. On his appointment to the readership, he found time to study the terrestrial Nemertines, hitherto largely unknown in Britain. His experiments have been characterized by a clarity and simplicity which has made them the basis of practical courses in comparative physiology throughout the world; his insistence on the need for a parallel study of structure and function has done much to unify the different approaches to the study of invertebrate animals.

Dr. Pantin was president of Section D of the British Association in 1951, Croonian lecturer of the Royal Society in 1952 and is now president of the Linnean Society. He has given much assistance and encouragement to marine biology overseas, particularly in New Zealand and Brazil. Since 1947 he has been editor of the *Quarterly Journal of Microscopical Science*. His wide experience and skill as a teacher will ensure the continuation of the high standards of zoology at Cambridge.

California Institute of Technology, Radio Observatory :

Dr. J. G. Bolton

JOHN GATENBY BOLTON has been appointed the first director of the California Institute of Technology's newly established Radio Observatory, which is situated near Big Pine in the picturesque Owens Valley of California. Bolton, while a member of the Radiophysics Division of the Australian Commonwealth Scientific and Industrial Research Organization, was responsible for some of the pioneering discoveries in radio astronomy, notably of the existence of 'radio stars'. In 1947, he was the first to put an upper limit (8' of arc) on the size of the previously reported source in Cygnus, to define its position with sufficient accuracy to be able to say it was in a region of the Galaxy distinguished by the absence of bright stars and nebulae, and to point out that the radio noise from it was out of all proportion to the optical radiation. Soon after, in 1948, he announced the position of other point sources; made the first identification with an optical object—that in Taurus with the Crab Nebula, the remains of an old supernova; and took some of the first steps in using the radio observations to throw new light on the structure of the Galaxy. With this background, it is not surprising that the research programme of the new Radio Observatory will be concerned prin-