

### Applied Mathematics in the University of Manchester : Prof. L. Mestel

DR. LEON MESTEL, University lecturer and Fellow of St. John's College, Cambridge, has been appointed to a new chair of applied mathematics in the University of Manchester. Early in his research career, Dr. Mestel attracted notice by new ideas which he put forward on the energy source of white dwarf stars. Difficulties had arisen if the source were attributed to nuclear processes; Dr. Mestel showed that the difficulties were overcome if the energy came from a cooling process. Subsequent research has amply confirmed this theory. In 1954, he was awarded a Harkness Commonwealth scholarship. While at Princeton University he worked with Prof. Lyman Spitzer on problems of star formation. In their joint work, important new ideas on the significance of an interstellar magnetic field and of interstellar grains were put forward. These ideas have been incorporated in all subsequent discussions of the star formation problem. Returning to Cambridge, Dr. Mestel was appointed University lecturer in mathematics. In 1957 he was elected a Fellow of St. John's College. His interests in cosmic electromagnetism have continued, and in recent years he has been much concerned with applying this subject to problems of cosmogony and of stellar magnetism.

### Mechanical Engineering in the University of Sussex : Prof. F. J. Bayley

DR. F. J. BAYLEY has been appointed the first professor of mechanical engineering in the University of Sussex. Dr. Bayley has been reader in gas dynamics at the University of Newcastle since 1959, in the Department of Mechanical Engineering where he had previously been a lecturer since 1955. After graduating at Newcastle in 1948, he specialized in fluid mechanics, thermodynamics and heat transfer. For his original contributions to these subjects he was awarded successively the degrees of M.Sc. (Dunelm) in 1951, Ph.D. (Dunelm) in 1955, and D.Sc. (Newcastle) in 1964. After taking his first degree he was appointed scientific officer at the National Gas Turbine Establishment at Pyestock, where he remained for 3 years until he was appointed a research engineer at the Pametrada Research Station in 1951. Two years later he returned to the then King's College, Newcastle, where he held a Clayton research fellowship from the Institution of Mechanical Engineers until he was appointed a University lecturer. Dr. Bayley has become well known in recent years as a consultant on special regenerator and heat-exchange problems and has advised a number of firms and institutions in regard to the design of such equipment, both in Britain and in the United States.

### William Whewell, F.R.S.—a Versatile Scientist

AMONG a number of scientists who have been eminent in more than one field, William Whewell, who died 100 years ago on March 6, was particularly remarkable. This Master of Trinity had so many activities as tutor and lecturer at Cambridge and as professor of mineralogy, as well as a science writer and author of full-scale texts, that it is surprising to look back on all his other work. The son of a master carpenter, Whewell went to Cambridge in 1812 and took various prizes, including the Chancellor's Medal for English, while all the time he was apparently a mathematician. He became second wrangler, wrote texts on mechanics, and always strove to improve mathematics teaching at Cambridge. Yet, after travels abroad, Whewell was equally noteworthy for dissertations on architecture, while in mineralogy and crystallography his papers in the *Philosophical Transactions of the Royal Society* as well as of the Cambridge 'Phil'—of which he was a founder member—were such that it seemed no surprise to find him elected to the chair of mineralogy in

1828. Whewell was a 'universalist', as his contemporaries put it. He naturally had critics, since he had a finger in many a pie, so much so that Sydney Smith commented: "Science is his forte, omniscience his foible". Yet though a theorist and philosopher rather than an experimentalist, Whewell benefited many of the branches of science in which he was interested. In geology, Whewell helped Lyell in nomenclature, while in electrical science students to-day scarcely realize that it was Whewell who introduced such everyday terms as 'ion' in his association with Faraday. Whewell was an acclaimed expert on the theory of tides, with fourteen memoirs in the *Transactions of the Royal Society*. President of the Geological Society and of the British Association for the Advancement of Science, and author of a classical three-volume *History of Inductive Sciences*, Whewell could write as well on astronomy as he could (after ordination) on theology. To appreciate the full breadth of his interests one must turn to the *Dictionary of National Biography*, in which whole columns are devoted to his publications alone.

### British Government Aid Overseas

IN reply to questions in the House of Commons on February 8, the Parliamentary Secretary to the Ministry of Overseas Development, Mr. A. E. Oram, said that British Government disbursements of economic aid were provisionally £189 million in 1965, compared with £160 million in 1963 and £191.6 million in 1964, the latter figures being 0.59 and 0.66 per cent of the gross national product, respectively. About £147 million of the 1965 total went to the Commonwealth. The Government's target for gross official aid in 1966-67 was £225 million. In a written answer, the Minister, Mr. A. Greenwood, stated that financial assistance was not being given to any African country which supported the illegal régime in Rhodesia. Britain's total bilateral economic aid to independent African countries in 1964-65 was £69.6 million, of which £17.1 million was for technical assistance; of this £63.7 million and £16.8 million, respectively, was to Commonwealth countries. In a written answer on February 10, Mr. Greenwood gave bilateral advances (including Exchequer advances to, but not total overseas investment by the Commonwealth Development Corporation) as £139.2 million in 1963, £173.2 million in 1964 and £172.3 million in 1965. Of these totals, £119.6 million, £153.7 million and £151.7 million, respectively, were for Commonwealth countries, and £22.5 million, £23.6 million and £28.6 million, respectively, for technical assistance to Commonwealth countries.

### Articulated Ship

IN reply to a question in the House of Commons on February 8, the Joint Parliamentary Secretary to the Ministry of Technology, Mr. R. Marsh, said that an articulated ship had been devised by a firm of naval architects. The National Research Development Corporation had already announced its willingness to consider sharing the cost of development of this ship as a joint venture if a suitable industrial partner could be found. The Corporation had for some years been supporting the development of *Dracones*, flexible containers that could be towed on water and used for the bulk transport of liquids. *Dracones* were already in production and operating successfully in several parts of the world.

### Computer Programme Library

IN reply to another question on February 8, Mr. Marsh said that the Computer Programme Library of the European Nuclear Energy Agency collected and distributed magnetic tapes on which were recorded data related to fundamental scientific and engineering problems in the nuclear field. The Library did not handle material relating to the evaluation of nuclear installations or