

scientific and technical advances. Even to-day, in the midst of his heavy administrative duties, he occasionally presents a paper to a learned society on some topic in the field of theoretical physics. Such papers show the characteristically original point of view and power of development noteworthy of his earlier academic work. His capacity for helpful comment on problems covering most of the range of physical science is quite remarkable and of great value to those working with him. His very wide interests are evidenced by his membership of some sixty committees covering an extremely diverse range of subjects and including the Aeronautical Research Council, the British Association, the Colonial Development Corporation, the University Grants Committee, and the Standing Advisory Committee on Artificial Limbs. He will retain in retirement from official duties many of his present interests, and will live in Cambridge, where he has many friends and close associations.

bf Prof. E. C. Bullard, F.R.S.

PROF. E. C. BULLARD, who is to succeed Sir Charles Darwin, probably in January 1950, is forty-one years old, and was educated at Repton and Clare College, Cambridge. He was appointed demonstrator in geodesy at Cambridge in 1931, and became Smithson Research Fellow in 1936, continuing his work at Cambridge. After the War he returned to Cambridge, and was made reader in geophysics. In 1948 he went to the University of Toronto as professor of physics. In his student career Prof. Bullard followed the ordinary courses in physics, but at the end of it he decided to take up experimental geophysics, and he very soon became one of the leading geophysicists in Britain. He has made important contributions to most of the main subjects in this field, either himself, or through the workers in the Cambridge school of which he was leader, or in some cases by organising co-operative research all over the world. These subjects have included gravity surveys; the seismic method of study of strata buried either under the earth or the sea; the rate at which the earth is losing heat; and terrestrial magnetism. At first, among other things he explored the anomalies in the Great Rift Valley of Africa. The seismic method of artificial explosions was first applied to find the depth of the palaeozoic strata in Cambridgeshire, and later, by the use of a submarine, similar work was started to study the strata in the sea around the British Isles. This work had not progressed far when it was interrupted by the War, but it has since been resumed by members of the Cambridge staff. In the matter of the loss of heat from the earth, Bullard has organised the study in both northern and southern hemispheres of the rate of loss of heat from the earth, which gives important information about the earth's radioactivity. During the War he was engaged principally on work for the Admiralty, at first on problems of de-gaussing. Later he was working with Prof. P. M. S. Blackett on a variety of problems connected with the anti-submarine campaign.

Thurlow Navigation Award for 1948: Mr. D. H. Sadler

THE Thurlow Navigation Award of the United States Institute of Navigation was founded in 1946 by Mr. Sherman Fairchild (president of the Fairchild Camera and Instrument Corporation, Inc.) in memory of the famous air navigator Colonel Thomas L.

Thurlow, who was killed in an air accident in 1944. The award is made each year to the person who, in the opinion of a representative selection committee, contributes most to the science of navigation. The first award, in 1946, for the year 1945 was made to Wing-Commander K. C. Maclure, who was navigator of *Aries* on its flights to the north magnetic and geographical poles. That for 1946 was made to John A. Pierce, the originator of the Loran system of radio hyperbolic navigation, and that for 1947 to Dr. John C. Bellamy, inventor of the Bellamy drift indicator. The award for 1948 has been made to Mr. Donald H. Sadler, superintendent of H.M. Nautical Almanac Office, in recognition of the work of the Office in the field of air navigation, particularly the production for the Royal Air Force of the "Air Almanac" and the "Astronomical Navigation Tables". More recently, the Office, which is part of the Royal Observatory, has been completely redesigning the "Abridged Nautical Almanac", so as to tabulate Greenwich hour angle instead of Right Ascension, and the new form will simplify the sea navigator's task. Because the new methods involve change of syllabus at the navigation schools and other changes, the introduction of the "Almanac" will be deferred until the year 1952. Mr. Sadler joined the Nautical Almanac Office in 1930, after doing research at the University of Cambridge, and was promoted to the post of superintendent in 1936. He was secretary of the Royal Astronomical Society during 1939-47 and vice-president in 1947-48. He played a large part in the formation of the [British] Institute of Navigation.

Botany at Manchester: Mr. George Sutton

At the end of the present session Mr. George Sutton retires from the post of chief steward of the Department of Botany in the University of Manchester, after fifty-two years service. He began work in 1897 as a boy of thirteen under Prof. F. E. Weiss, at a time when the Department occupied a single room, and the professor's assistant was F. W. (later Sir Frederick) Keeble. At his retirement Mr. Sutton leaves one of the largest departments in the country, which owes much to his loyal and skilled help. During his long service Mr. Sutton has won the friendship and gratitude of a succession of botanists, and no less than a dozen chairs are at present occupied by ex-students or ex-members of staff of the Department. At an informal dinner held in Manchester on June 24, and attended by Prof. and Mrs. Weiss, a presentation was made to Mr. Sutton from more than a hundred past and present members of the Department of Botany.

The Technical University, Berlin (1799-1949)

IN 1879, the Technische Hochschule was established in Berlin following the fusion of two existing technical academies; the Gewerbeakademie, a species of polytechnic dating from 1821; and the Bauakademie, effectively a technical school for constructional engineers, which was founded in 1799. On this fact rests the claim of the "Technical University" to celebrate its hundred and fiftieth anniversary, and a recently published pamphlet (*Von der Bauakademie zur Technischen Universität: 150 Jahre Technisches Unterrichtswesen in Berlin.* By Prof. Josef Becker. Pp. 44+6 plates. Berlin-Charlottenburg; 1949) is a description in some forty pages of the history of the Technische Hochschule and its forerunners. The

interest of the pamphlet lies, however, not so much in the typical enough story of past development as in the present situation and its potentialities for the future. The Berlin Technical Highschool was renamed the Technical University in 1946, almost, as it were, in repudiation of its former reputation, and completely in line with the Faustian conception, current to-day among German technicians, that technology cultivated without regard to its social and humanistic responsibilities has a 'demonic power' over its practitioners. This conception, which was debated with very marked emotional content at the Darmstadt Conference of Engineers in 1947, has led to a movement among the technical highschools to include some sort of 'humanistic faculty' in their teaching. Aachen and Berlin, at least, have actually taken practical steps in this direction, and it is on these grounds that the Technische Hochschule Berlin-Charlottenburg now claims the title of University. The German technicians appear, in fact, to be finding for themselves a rationalization of the apocalyptic destruction, material and moral, of the German debacle; and it may well prove that the outward expression will not be confined in the future to mere platform oratory and piously expressed intentions. On the contrary: the German capacity to rationalize a strong emotional surge in fact and deed may have important consequences in the future bias of technical education in Germany. It is here, if anywhere, that the Herlin pamphlet is significant.

International Health Bulletin

THE first (January-March 1949) issue of a new quarterly journal, entitled *International Health Bulletin of the League of Red Cross Societies*, published in French and English (8 rue Munier-Romilly, Geneva; 66 Swiss francs, or 1.50 dollars a year), shows that Red Cross Societies and their medical advisers now have a unified and well-edited epitome of the medical aspects of international Red Cross work. Designed to replace the League's *International Health Review* and to revive its earlier surveys of medical and scientific literature, this new bulletin will summarize the most recent and original projects undertaken by the various national Red Cross Societies and will report important medical developments likely to interest Red Cross workers. Described by its editor as a "modest review, designed to appeal to all Red Cross medical advisers", the bulletin is not intended to rival other scientific publications; but it will be surprising if it does not interest many who do not actually work for the Red Cross. In the first issue there are articles by medical men of many nationalities, including articles on co-operation between the League of Red Cross Societies and the World Health Organisation, on the League's extensive and thorough campaign against tuberculosis, on its relief work in the Near East and on its work on venereal diseases, blood-transfusion, first aid, social service and other problems. About half this issue is given to medical information under the heading of "Medical News", examples of the items discussed being the risks of new drugs and the uses of aureomycin and streptomycin. A short survey of books and a list of the films in the League's film library add to the value of this number. The information given about the contents of future issues suggests that these will be no less interesting. No doubt there will be a big demand for the two forthcoming special issues, one entitled "Atomic Bomb and Atomic Medicine" and the other "Cancer Detection".

Standardization of Units of Measurement in Civil Aviation

THE Montreal headquarters of the International Civil Aviation Organisation has announced that substantial progress has been made towards the solution of a problem, in the world of air transport, that has always made difficult the international exchange of ideas, namely, the standardization of units of measurement used in scientific work. Although this problem is not peculiar to aviation, the result of a misunderstanding due to a multiplicity of measuring units is likely to be more disastrous to the occupants of aircraft in flight than to anyone else. The plan consists of an agreement to use five tables of units, incorporating both the metric and the foot-pound-second systems. The first table uses the English system (except that it measures temperatures in Centigrade instead of Fahrenheit). Each other table introduces alterations leading progressively towards the metric system, the change in each case being the one that the organisation has agreed will be the next most easy to adopt. The final (fifth) table uses the metric system, with the exception of nautical miles and decimal parts for long distances and speeds. Time is measured in twenty-four hours, beginning at midnight Greenwich Mean Time. At present there are at least fourteen different combinations of units in use within the territories of the member States of the Organisation. Table 5, the complete adoption, has been accepted immediately by sixteen nations, and eighteen others, of which Great Britain is one, have accepted one of the other four tables and will progress towards the final standardizations in due course. There are fifty-two member nations in the world organisation.

Cambridge School of Veterinary Medicine

THE University of Cambridge has decided to initiate a course of veterinary teaching, and powers are being sought under the Veterinary Surgeons Act, 1948, to confer a degree in veterinary medicine that will be a registerable qualification. In October a limited number of veterinary students will begin a six-year course leading to this degree, of which the first three years will be spent in study for the Natural Sciences Tripos, and the following three years in professional studies. It is probable that colleges will stipulate the passing of three of the four parts of the First M.B. Examination as the necessary condition for admission to the course. Plans are being drawn up for the erection of buildings for the new School of Veterinary Medicine, which will be situated within two miles of the centre of Cambridge on an area of approximately 120 acres of farmland. Financial provision for these courses will be made by the University Grants Committee, and £31,000 has been allocated for 1949-50.

Exhibition of Joule's Water-Friction Apparatus

IN June 1849, J. P. Joule announced the results of extensive researches carried out in Manchester, in which he found that the expenditure of energy, in whatever form, is always accompanied by the production of a corresponding amount of heat. Prior to this, there had been considerable disagreement among men of science concerning the nature of heat; some held it to be a material fluid (called caloric) which permeated the space between particles composing a hot body, while others attributed it to the mechanical energy of these same particles which were to be