

is, as usual, a large volume (Pp. xii+595+100 plates. Washington, D.C.: Government Printing Office, 1964. 4.25 dollars). It includes original papers by members of the staff and others, in addition to the usual statistics. Such papers include one on the Solar system by Sir Bernard Lovell, another on the use of the electron microscope in the examination of fossils, and also one on the future of underwater archaeology. The most notable development during the year was the progress made in the completion of the great new Museum of History and Technology building. It will contain 50 exhibition halls, and space has been set aside for the extensive reserve collections of the Institution.

#### The Wellcome Historical Medical Museum and Library

FOLLOWING the completion of the reorganization of the Wellcome Historical Medical Library, plans are now being prepared for a great expansion of the Wellcome Historical Medical Museum. The Trustees have ensured that the Museum shall have all the accommodation required to fulfil the aims of its founder and (for the first time) make all its collections on the history of medicine and science generally available for study and research. New exhibitions and study galleries now being planned include a synoptic exhibition on the history of medicine from earliest times to the present day, and an exhibition about medicine in art which will be concentrated on the art objects from the Museum's collections. In addition to these new permanent sections for the Museum, adequate space has been allocated for temporary special exhibitions in which individual topics of particular medical or scientific importance will be dealt with.

#### Publications of the World Health Organization

THE World Health Organization publishes a number of periodicals, and in addition a number of reports at irregular intervals. The former include the *Bulletin of the World Health Organization*, *WHO Chronicle* and the *International Digest of Health Legislation*. The latter include the *WHO Technical Report Series* and the *WHO Monograph Series*. A bibliography of all these publications has been published for the years 1947-57, and recently that covering the years 1958-62 appeared (Pp. 125. Geneva: World Health Organization; London: H.M.S.O., 1965. 12 Sw. francs; 20s.; 4 dollars). It classifies the articles under separate headings, first the technical articles and then administration and general articles. There is also an author index and an index of countries. We can thus now have fairly up-to-date information of what it is that the World Health Organization has been publishing; one sometimes feels that it would be an even greater boon if one could have easier access to some of the publications themselves.

#### Benzene Centenary

AN outstanding contribution to organic chemistry came 100 years ago with F. Kekulé's conception of the ring structure of benzene. In the *Bulletin de la Société Chimique* in 1865, Kekulé, a pupil of Liebig while at Giessen, published his thesis "On the Constitution of Aromatic Compounds", in which he put forward the idea of a hexagonal structure of carbon atoms—thus explaining the fact that no aromatic compound contains less than six carbon atoms. He referred to six "unsatisfied affinities" in the structure, and suggested the well-known 'Kekulé ring' with alternate single and double bonds in the linking. Kekulé made many predictions on the basis of his theory, rather like Mendeleev, who kept on forecasting new elements from his Periodic Law. Thus, after referring to the benzene 'nucleus' and to 'side-chains', Kekulé showed how homologues of benzene were possible when the number of side-chains or their lengths were increased. Accordingly, he maintained that there should be three dimethylbenzenes and one ethylbenzene. In deducing the number of possible substitution products in the case of the dibromonitrobenzenes, for example, he

enabled Körner to formulate his orientation scheme. Later, Erlenmeyer extended Kekulé's structure to the constitution of naphthalene, while Dewar extended the 'aromatic' theme to include pyridine and quinoline structures. The benzene theory substantiates Kekulé's claim to a niche in chemical history: seven years previously he had laid a foundation to this claim with his "Theory of Molecular Structure" in the *Annalen der Chemie* of 1858, with his conception of linking between quadrivalent carbon atoms to form chains.

#### Soil and Pasture Research in Australia

THE Northern Tablelands of New South Wales form one of the natural regions of the Great Dividing Range, comprising some eight million acres in the north-east of New South Wales, lying in the summer-rainfall zone and of average elevation 2,500 ft. A freely illustrated publication prepared by the Commonwealth Scientific and Industrial Research Organization, in co-operation with the New South Wales Department of Agriculture, gives an account of the establishment and maintenance of pastures on the Tablelands for the feeding of four million sheep and 300,000 cattle (*Soil and Pasture Research on the Northern Tablelands, New South Wales*. Pp. 81. Melbourne: Commonwealth Scientific and Industrial Research Organization, 1964). There is a frost-free period of about six months, but the native grasses are checked and are unpalatable during the winter. The total rainfall is a little more than 30 in., but 60 per cent falls in the summer, and does not maintain an adequate supply of water for plant growth. The deficiency, however, is usually not large and may be overcome by fallowing, constructing contour banks or by irrigation. The important broad groups of soils are solodic with alkaline clay sub-soil and podsollic with neutral or acid sub-soil, both on sedimentary or granite, and black earths which are dark-coloured clays derived from basalt. More than 80 per cent of the species of native pastures consist of perennial grasses and are unable to provide winter feed; sown pastures of grasses and clovers, on the other hand, have a high production potential. Experimental evidence indicates that the major nutrients lacking are nitrogen, phosphorus and sulphur; of the trace elements, boron and molybdenum are deficient in some soils. The introduction of clovers is highly desirable, but there are problems concerning locality and nodulation that still have to be solved. In the meantime, it seems that 'strategic grazing' would be the most effective policy.

#### Problems of Cooley's Anaemia

THE wide interest displayed in the problems of 'Cooley's anaemia' is reflected by the recent publication of the transactions of a three-day conference held in New York (*Annals of the New York Academy of Sciences*, 119, Article 2: *Problems of Cooley's Anemia*, by Harold Fink and 76 other authors. Pp. 369-850. New York: New York Academy of Sciences, 1964. 8 dollars). There are papers by geneticists, biochemists and clinical scientists and the volume gives a comprehensive view of the latest advances in this area of research. The number of theories advanced to explain the various findings in this disease shows that we are still some way from an explanation of what has gone wrong, but a great deal of information on different aspects of this disease is collected in this symposium which should be of considerable value to workers in this field.

#### University News:

#### Oxford

THE Committee appointed by the Hebdomadal Council to make detailed proposals for the closer integration of university teaching and research with the college system at the University of Oxford has now reported (Pp. 10. Supplement No. 1 to the *University Gazette*, November 1964. Oxford: The University, 1964. 6d.). Concluding that there must be a clear definition of university posts