

stances, of lower molecular weight, and polysaccharides of molecular weight 120,000–400,000. They are linear and flexible, giving solutions of high viscosity. Humic acids are held at positive sites and do not penetrate the interlamellar regions as do the polysaccharides. The soil properties are changed by the formation of the complex. Organic material lining the coarse pores increases the strength of the aggregates. Organic cations are less strongly hydrated than inorganic cations and reduce the affinity of the surface for water; this may account for the common phenomenon of non-wetting sandy soils, certain soil regions becoming hydrophobic. Some organic compounds increase the swelling of clays, some organic anions cause flocculation of clay, some polysaccharides increase the stability of aggregates. Microbiological activity may be stimulated even though interlamellar protein is only slowly attacked by enzymes. This is of importance in relation to toxins added to the soil as pesticides, since positively charged organic matter is likely to be strongly adsorbed and liable to accumulation.

Manganese at Groote Eylandt, Australia

GROOTE EYLANDT is in the Gulf of Carpentaria, off the east coast of Arnhem Land, Northern Territory, Australia. Apart from a limited potential for development of fishery, pearl culture and some tourist trade, the principal asset of the island is now known to be manganese ore deposits, proved by an extensive geological survey in 1960 by P. R. Dunn (Bureau of Mineral Resources) and P. W. Crohn (senior resident geologist, Northern Territory Administration). The survey was followed in 1963 by an exploration programme, ultimately involving more than 300 pits and 600 drill holes. The deposit is regarded as a most important source of manganese, by far the largest yet known in Australia, and similar in many technical respects to those of the Ukraine and Georgia, in the U.S.S.R. (The latter contain the largest deposits and greater part of the world's reserves of manganese.) Under title "Manganese Ore Deposits at Groote Eylandt", W. C. Smith, assistant exploration geologist, The Broken Hill Proprietary Co., Ltd., has given a brief account of the Australian deposits (*The B.H.P. Technical Bulletin*, 24. The Broken Hill Proprietary Co., Ltd., Newcastle, N.S.W. 9, No. 3; November 1965).

Like the Russian manganese deposits (except in geological age), the Groote Eylandt deposits represent primary sediments, laid down under shallow-water, restricted marine conditions, on a platform, stable from Cambrian times until the beginning of the Lower Cretaceous marine transgression. The ore occurs as a single bed or zone within what are called the Mullaman Beds (Lower Cretaceous). It consists commonly of loose pisolites of pyrolusite and cryptomelane, ranging in size from 1 mm to 12 mm and associated with quartz sand, clay and fine pyrolusite. Another type comprises hard pebbles and boulders of the same minerals, again with pisolitic texture. There is wide variation in thickness, grade and distribution of these types of ore within the manganese zone; where both types are present together, however, the lump ore is found to overlie the loose, smaller, pisolitic material. The average grade of crushed and wet-screened lump ore ranges from 46 to 48 per cent manganese; the loose pisolite ore contains 44–46 per cent of manganese.

Royal Irish Academy

At the stated meeting of the Royal Irish Academy on March 16 the following officers were elected: *President*, Dr. M. Dillon; *Treasurer*, Dr. V. C. Barry; *Secretary*, Dr. B. Ó Cúiv; *Secretary of the Science Committee*, Dr. W. Cocker; *Secretary of the Irish Studies Committee*, D. Greene.

The Scientific Estate

OXFORD UNIVERSITY PRESS has written to the Editor stating that it is the publisher in the United Kingdom

of Prof. D. K. Price's *The Scientific Estate*, which was reviewed on p. 115 of the January 8 issue of *Nature*. The price of the book in the United Kingdom is 48s. net.

Appointments

MR. J. A. RATCLIFFE, formerly director of the Radio and Space Research Station of the Science Research Council, has been appointed by the Council of the Royal Society to be Rutherford Memorial Lecturer for 1966 in Australia, and to deliver the Lecture in Sydney on April 26.

DR. J. W. KING, a physicist at the Radio and Space Research Station, Slough, Bucks, has received the 1965 Wolfe Award for his work on "the analysis of results obtained from 'topside sounding satellites' and their interpretation in terms of ionosphere theory".

MR. RONALD W. CLARK is preparing a biography of the late Prof. J. B. S. Haldane and would be glad to receive any reminiscences or other material concerning him. Such information should be sent to 10 Campden Street, Kensington, London, W.8.

Announcements

THE new Engineering Research Station of the Gas Council is to be established at Killingworth near Newcastle upon Tyne.

A MEETING of the Biological Engineering Society will be held at the National Physical Laboratory, Teddington, on April 29. Further information can be obtained from W. J. Perkins, the National Institute for Medical Research, Mill Hill, London, N.W.7.

A MEETING on "Thermodynamics of Ceramic Systems" will be held by the Basic Science Section of the British Ceramic Society in London during April 19–21. Further information can be obtained from Dr. J. P. Roberts, Houldsworth School of Applied Science, University of Leeds, 2.

A MEETING on "Soil Moisture—Physical and Biological Aspects", organized by the British Society of Soil Science, will be held in University College, London, during April 19–20. Further information can be obtained from Dr. D. V. Crawford, University of Nottingham School of Agriculture, Sutton Bonington, Loughborough, Leicestershire.

THE twentieth annual Frequency Control symposium, sponsored by the Electronic Components Laboratory of the U.S. Army Electronics Command, will be held in Atlantic City, New Jersey, during April 19–21. Further information can be obtained from the Director, Electronic Components Laboratory, U.S. Army Electronics Command, Fort Monmouth, New Jersey.

AN international symposium on "The Radiological Protection of the Worker by the Design and Control of his Environment" will be held by the Society for Radiological Protection in Bournemouth during April 18–22. Further information can be obtained from D. B. B. Janisch, Production Group, United Kingdom Atomic Energy Authority, Risley, Warrington, Lancashire.

COURSES in metrology and quality control will be offered at the University of Aston in Birmingham during 1966. A course on "Measurement and Quality Control" will be held during April 25–May 6, and a course on "Statistical Quality Control and Acceptance Sampling" will be held during June 13–July 1. Further information can be obtained from the Department of Production Engineering, University of Aston in Birmingham, Gosta Green, Birmingham.

CORRIGENDUM. It was announced on p. 1073 of the March 12, 1966, issue of *Nature* that Dr. P. W. Kent had been appointed to the chair of biochemistry in the Queen's University of Belfast. It has been brought to the Editor's attention that Dr. Kent will not, in fact, be taking up this position.