

ploid leaves contain about 30 per cent more water than the diploids; the roots, on the other hand, have approximately the same composition in tetraploids and diploids, whether calculated on fresh weight or residual dry weight. Thus, "The difference between the leaf structures of tetraploid and diploid barley, apart from the difference in volume, appears to be that the tetraploid leaf cells contain comparatively more water, sugar and ash, while the amounts of cytoplasmic substances are proportionally the same. In the root cells it is mainly only the cell volume which is changed."

By correlating the analyses with measurements of the cell dimensions in a number of organs and tissues, it seems that when the cell volume increases as a result of doubling the number of chromosomes, in the leaf, the 'thickness' of the cytoplasmic layers and cell walls is uniformly increased but not to the same extent as the cell dimensions, that is, the cells have a larger proportion of their volume as vacuole. In the roots, however, the 'thickness' of the cytoplasmic layers and cell-walls increases to the same degree as the general cell dimensions.

## FORTHCOMING EVENTS

### Monday, January 22

INSTITUTION OF ELECTRICAL ENGINEERS (at Savoy Place, Victoria Embankment, London, W.C.2), at 5.30 p.m.—Discussion on "Applications of Electricity to Water Supply" (to be opened by Mr. J. F. Shipley).

### Tuesday, January 23

INSTITUTION OF CIVIL ENGINEERS (at Great George Street, Westminster, London, S.W.1), at 5.30 p.m.—Mr. S. R. Raffety: "Rural Water Supplies".

ROYAL AERONAUTICAL SOCIETY (at the Institution of Mechanical Engineers, Storey's Gate, St. James's Park, London, S.W.1), at 5.30 p.m.—Discussion on "Civil Aviation".

### Tuesday, January 23—Wednesday, January 24

IRON AND STEEL INSTITUTE (joint meeting with the LINCOLNSHIRE IRON AND STEEL INSTITUTE) (in the Technical School, Cole Street, Scunthorpe), at 7.30 p.m.—Mr. G. D. Elliot: "Ironmaking at the Appleby-Frodingham Works of the United Steel Companies, Limited".

### Wednesday, January 24

ROYAL SOCIETY OF ARTS (at John Adam Street, Adelphi, London, W.C.2), at 1.45 p.m.—Mr. James B. Firth: "Forensic Science".

SOCIETY OF CHEMICAL INDUSTRY (joint meeting of the PLASTICS GROUP with the BRITISH RHEOLOGISTS' CLUB and the FARADAY SOCIETY) (at the Institution of Mechanical Engineers, Storey's Gate, St. James's Park, London, S.W.1), at 2.30 p.m.—Dr. G. W. Scott-Blair: "The Rheology of Plastics".

TELEVISION SOCIETY (joint meeting with the RADIO SECTION OF THE INSTITUTION OF ELECTRICAL ENGINEERS) (at the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, London, W.C.2), at 5.30 p.m.—Mr. Donald G. Fink: "American Television Broadcasting Practice, 1927-1944".

BRITISH ASSOCIATION OF CHEMISTS (BIRMINGHAM SECTION) (in the Large Hall, Chamber of Commerce, New Street, Birmingham), at 6.30 p.m.—Discussion on "Social Security for Chemists".

### Thursday, January 25

LONDON MATHEMATICAL SOCIETY (at the Royal Astronomical Society, Burlington House, Piccadilly, London, W.1), at 3 p.m.—Prof. J. Hadamard: "Psychological and Personal Recollections of a Mathematician".

### Friday, January 26

INSTITUTION OF MECHANICAL ENGINEERS (at Storey's Gate, St. James's Park, London, S.W.1), at 5.30 p.m.—Mr. J. Foster Petree: "Mechanical Engineering in the Shipyard" (Seventeenth Thomas Lowe Gray Lecture).

INSTITUTE OF FUEL (SCOTTISH SECTION) (at the Royal Technical College, Glasgow), at 5.45 p.m.—Dr. J. M. Ferguson: "The Insulation of Open-Hearth Furnaces and Blast-Furnaces".

### Saturday, January 27

ASSOCIATION FOR SCIENTIFIC PHOTOGRAPHY (at Caxton Hall, Westminster, London, S.W.1), at 2.30 p.m.—Mr. H. K. Bourne: "Electric Discharge Lamps for Photography".

## APPOINTMENTS VACANT

APPLICATIONS are invited for the following appointments on or before the dates mentioned:

SENIOR EXECUTIVE ENGINEER by the Public Works Department, Trinidad—The Ministry of Labour and National Service, Central (T. and S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2 (quoting Reference No. E.1304.A) (January 24).

ENGINEER for the Public Works Department, Government of Trinidad—The Ministry of Labour and National Service, Central (T. and S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2 (quoting Reference No. E.1299.A) (January 25).

HEAD OF THE DEPARTMENT OF SCIENCE of the South-East Essex Technical College and School of Art, Dagenham—The Chief Education Officer, County Offices, Chelmsford (January 27).

PLANT ENGINEER (must have general scientific educational background, degree in physics or mechanical engineering; some precision engineering experience essential) by a firm in Middlesex—The Ministry of Labour and National Service, Central (T. and S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2 (quoting Reference No. C.2321.XA) (January 27).

CONTROLLER OF MATERIALS in the Directorate-General of Aircraft in India—The Ministry of Labour and National Service, Central (T. and S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2 (quoting Reference No. C.2430.A) (January 30).

ASSISTANT TO THE ADVISORY CHEMIST for the South Eastern Province under the scheme of the Ministry of Agriculture and Fisheries—The Acting Principal, South-Eastern Agricultural College, Wye, Ashford, Kent (January 30).

SENIOR RESEARCH CHEMIST with experience in manufacture of or research on petroleum products (Reference No. F.2777.XA), a RESEARCH CHEMIST with chemical engineering qualifications (Reference No. F.2778.XA), and a RESEARCH CHEMIST with laboratory experience in petroleum or heavy chemicals (Reference No. F.2779.XA), in the Research and Development Department of a British Oil Company at its Refinery in N.W. England—The Ministry of Labour and National Service, Central Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2 (quoting the appropriate Reference No.) (February 12).

ASSISTANT ENGINEERS (temporary) by the Kenya Government Public Works Department, for water supply schemes—The Ministry of Labour and National Service, Appointments Department A.3(B.), Room 5/17, Sardinia Street, Kingsway, London, W.C.2 (quoting Reference No. E.1317.A) (February 12).

UNIVERSITY READERSHIP IN LOGIC AND SCIENTIFIC METHOD, tenable at the London School of Economics and Political Science—The Academic Registrar, University of London, c/o Richmond College, Richmond, Surrey (February 26).

LECTURER IN VETERINARY PARASITOLOGY—The Registrar, The University, Liverpool (February 28).

DIRECTOR OF MUSEUMS—The Town Clerk, Municipal Buildings, Dale Street, Liverpool, 2 (February 28).

CHAIR OF GEOGRAPHY, and the CHAIR OF GEOLOGY—The Registrar, The University, Sheffield (March 31).

UNIVERSITY READERSHIP IN ENTOMOLOGY, tenable at the London School of Hygiene and Tropical Medicine—The Academic Registrar, University of London, c/o Richmond College, Richmond, Surrey (July 31).

ASSISTANT (medical graduate) IN ANATOMY—The Secretary, The University, Aberdeen.

## REPORTS and other PUBLICATIONS

(not included in the monthly Books Supplement)

### Great Britain and Ireland

Scheme for a Degree Course in Chemical Engineering. Pp. 28. (London: Institution of Chemical Engineers.) [101]

Ministry of Labour and National Service. Higher Appointments: Report of the Committee appointed by the Minister of Labour and National Service in July 1943. (Cmd. 6576.) Pp. 62. (London: H.M. Stationery Office.) 1s. net. [101]

### Other Countries

Bulletin of the Bingham Oceanographic Collection. Vol. 9, Art. 2: Studies on the Marine Resources of Southern New England, 1: An Analysis of the Fish Population of the Shore Zone. By Herbert E. Warfel and Daniel Merriman. Pp. 92. (New Haven, Conn.: Peabody Museum of Natural History, Yale University.) 1.50 dollars. [2812]

Annual Report of the Imperial Council of Agricultural Research for 1943-44. Pp. ii+44. (Delhi: Manager of Publications.) 2 rupees; 3s. [2812]

Republica Argentina: Ministerio de Agricultura, Direccion de Meteorologia, Geofisica e Hidrologia. Serie E, No. 1: El Tercer Centenario del Barometro. Pp. 12. (Buenos Aires: Ministerio de Agricultura.) [2812]

Indian Forest Leaflet No. 65: Conditioning Chamber for Plywood. By M. A. Rehman. Pp. ii+3. (Dehra Dun: Forest Research Institute.) 6 annas; 7d. [2812]

Food is Where you Find It: a Guide to Emergency Foods of the Western Pacific. By Lucy M. Cranwell, Josiah E. Green and A. W. B. Powell. Pp. 72+4. (Auckland: Auckland Institute and Museum.) [41]

Seventeenth Annual Report of the Council for Scientific and Industrial Research, for the Year ended 30th June 1943. Pp. 76. (Cannberra: Commonwealth Government Printer.) 3s. 4d. [41]

Papers of the Michigan Academy of Science, Arts and Letters. Vol. 29 (1943). Pp. xiii+606. (Ann Arbor, Mich.: University of Michigan Press; London: Oxford University Press.) 5 dollars; 28s. net. [51]

New Zealand: State Forest Service. Annual Report of the Director of Forestry for the Year ended 31st March 1944. Pp. 38. (Wellington: Government Printer.) 1s. [51]