

leaf insertion, has still the single vascular ring characteristic of the dicotyledon instead of the scattered bundle structure which would be associated with the entry of similar numerous trace strands into a monocotyledon axis. The distinction seems to be linked with the fact that in the dicotyledon the vigorous growth activity associated with the development of the leaf primordium is expressed in increase in the pro-vascular meristem. As a result the main structural features of the leaf, midrib and main veins correspond with the pattern of venation, while superficial ridges on the axis show a similar correlation with the pattern of the vascular ring. In the monocotyledon, on the other hand, both encircling leaf and subtending axis progress in size mainly by increase in the parenchymatous semi-meristem in which the pro-vascular elements are embedded. The latter keep pace with the growth of the tissues around but do not dominate it and so impress the vascular pattern on the general organization. Thus a leaf midrib, if present, may show little correlation with the course of the veins and in the axis the vascular strands lie dispersed among the ground tissue.

The author discusses how these different methods of development affect the interpretation of the shoot of dicotyledon and monocotyledon as an articulate structure, built up of coalescing 'phytons'.

## FORTHCOMING EVENTS

### Wednesday, July 22

INSTITUTE OF CHEMISTRY (BIRMINGHAM AND MIDLANDS SECTIONS) (at the Chamber of Commerce, New Street, Birmingham), at 6 p.m.—Prof. W. N. Haworth, F.R.S.: "Structure and Pattern in Carbohydrates".

### Saturday, July 25

NUTRITION SOCIETY (JOINT MEETING WITH THE FOOD GROUP, SOCIETY OF CHEMICAL INDUSTRY) (at British Medical Association House, Tavistock Square, London, W.C.1), at 11 a.m.—Conference on "Dehydration of Foods and the Effect on their Nutritional Value".

### Friday and Saturday, July 24-25

BRITISH ASSOCIATION (DIVISION FOR THE SOCIAL AND INTERNATIONAL RELATIONS OF SCIENCE) (at the London School of Hygiene and Tropical Medicine, Keppel Street, London, W.C.1), at 10 a.m.—Conference on "Mineral Resources and the Atlantic Charter".

## APPOINTMENTS VACANT

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

LECTURESHIP IN MECHANICAL ENGINEERING—The Principal, Heriot-Watt College, Edinburgh (July 27).

LECTURER (UNGRADED) IN BIOCHEMISTRY—The Registrar, The University, Liverpool (July 30).

CHIEF ASSISTANT ENGINEER—The Clerk and Manager, West Midlands Joint Electricity Authority, Phoenix Buildings, Dudley Road, Wolverhampton (endorsed 'Chief Assistant Engineer') (July 31).

REGIUS PROFESSOR OF ENGINEERING AT EDINBURGH UNIVERSITY—The Private Secretary, Scottish House, Fieldon House, 10 Great College Street, London, S.W.1 (September 7).

MISTRESS TO TEACH MATHEMATICS (MAINLY ARITHMETIC AND BOOK-KEEPING)—The Headmistress, Day Technical School for Girls, Fort Pitt, Chatham.

MASTER WELL QUALIFIED IN MATHEMATICS AND ENGINEERING SCIENCE—The Principal, Technical Institute and Junior Technical School, Gravesend.

TEACHER FOR DAY AND EVENING ENGINEERING CLASSES, and a TEACHER FOR ENGINEERING WORKSHOP PRACTICE AND METALWORK—The Principal, County Technical College, Gainsborough, Lincs.

ASSISTANT (MALE OR FEMALE) TO THE PUBLIC ANALYST—The Secretary, Health Department, Grey Friars, Leicester.

## REPORTS and other PUBLICATIONS

(not included in the monthly Books Supplement)

### Great Britain and Ireland

Lister Institute of Preventive Medicine. Report of the Governing Body, 1942. Pp. 24. (London: Lister Institute.) [17]

Proceedings of the Royal Society of Edinburgh, Section B (Biology). Vol. 61, Part 3, No. 20: On the Feeding and Breeding of *Calanus finmarchicus* under Laboratory Conditions. By J. E. G. Raymont and Dr. F. Gross. Pp. 267-287. 1s. 9d. Vol. 61, Part 3, No. 21: The Specific Gravity of *Calanus finmarchicus*. By Dr. F. Gross and J. E. G. Raymont. Pp. 288-296. 9d. (Edinburgh and London: Oliver and Boyd.) [17]

Philosophical Transactions of the Royal Society of London. Series A: Mathematical and Physical Sciences. No. 805, Vol. 239: The Geometry of Matrices. By H. W. Turnbull. Pp. 233-267. 5s. Series B: Biological Sciences. No. 579, Vol. 231: The Lower Devonian Flora of the Senni Beds of Monmouthshire and Breconshire. By W. N. Croft and W. H. Lang. Pp. 131-163 + plates 9-11. 8s. (London: Cambridge University Press.) [67]

Journal of the Institute of Metals. Vol. 67, 1941. Edited by N. B. Vaughan. Pp. xxii + 380 + 46 plates. (London: Institute of Metals.) 40s. net. [67]

Metallurgical Abstracts (General and Non-Ferrous). Vol. 8, 1941 (New Series). Edited by N. B. Vaughan. Pp. x + 434. (London: Institute of Metals.) [67]

British Rubber Producers' Research Association. Publication No. 22: Analytical Methods in Rubber Chemistry. 5: Estimation of the Oxygen of Highly Autoxidised Rubber contained in Carboxyl, Ester, Carbonyl, Epoxide and Hydroxyl Groups. By F. Hilton. Pp. 319-332. (London: British Rubber Producers' Research Association.) [67]

Proceedings of the Royal Irish Academy. Vol. 47, Section A, No. 7: Non-Linear Optics. By Erwin Schrödinger. Pp. 77-117. 2s. Vol. 48, Section B, No. 2: The Effect of Temperature on the Vacuum Frequency of *Stylonychia pustulata*. By J. D. Smyth. Pp. 25-41. 1s. (Dublin: Hodges, Figgis and Co., Ltd.; London: Williams and Norgate, Ltd.) [77]

National Trust for Places of Historic Interest or Natural Beauty. Report 1941-1942. Pp. 40 + 2 plates. (London: National Trust.) [77]

Report of the Astronomer Royal to the Board of Visitors of the Royal Observatory, Greenwich, read at the Annual Visitation of the Royal Observatory, 1942 June 6. Pp. 16. (London: Royal Observatory, Greenwich.) [77]

### Other Countries

Bulletin of the American Museum of Natural History. Vol. 79, Art. 2: Mammals of Honduras. By George G. Goodwin. Pp. 107-196. (New York: American Museum of Natural History.) [17]

Report of the Aeronautical Research Institute. Tōkyō Imperial University. No. 211: On the Theory of Turbulent Boundary Layer on a Flat Plate. By Tatudirō Sasaki. Pp. 483-492. (Tōkyō: Kōgyō Toshō Kabushiki Kaisha.) 35 sen. [17]

Imperial College of Tropical Agriculture: Low Temperature Research Station. Memoir No. 18: Studies in Tropical Fruits. 10: Preliminary Observations on Transpiration during Ripening. By E. R. Leonard. Pp. 89-119. (Trinidad: Imperial College of Tropical Agriculture.) [17]

Annals of the Astrophysical Observatory of the Smithsonian Institution. Vol. 6. By C. G. Abbot, L. B. Aldrich and W. H. Hooper. (Publication No. 3650.) Pp. viii + 207 + 7 plates. (Washington, D.C.: Smithsonian Institution.) [17]

Smithsonian Institution: United States National Museum. Bulletin 173: Catalog of the Type Specimens of Mammals in the United States National Museum, including the Biological Surveys Collection. By Arthur J. Poole and Viola S. Schantz. Pp. xlii + 705. (Washington, D.C.: Government Printing Office.) 1.25 dollars. [37]

National Research Council of Canada. N.R.C. No. 1061: Illumination and Visual Range under Water. By R. Ruedy. Pp. 32. (Ottawa: National Research Council of Canada.) 25 cents. [37]

Papers from the Tortugas Laboratory. Vol. 35: The Photodynamic Action of Dyes on the Eggs of the Sea Urchin, *Lytechinus variegatus*. By David Hilt Tennent. (Publication 539.) Pp. v + 153 + 8 plates. (Washington, D.C.: Carnegie Institution.) 1.75 dollars. [37]

Canada: Department of Mines and Resources: Mines and Geology Branch, Bureau of Mines. Industrial Waters of Canada: Report on Investigations, 1934 to 1940. By Harald A. Leverin. (No. 807.) Pp. 112. (Ottawa: King's Printer.) [67]

Department of Agriculture, Canada. Annual Report of the Forest Insect Survey Forest Insect Investigations, 1941. Pp. 23. (Ottawa: King's Printer.) [67]

Records of the Queen Victoria Museum, Launceston. Vol. 1, No. 1, 15th January. Pp. 64 + 12 plates. (Launceston: Queen Victoria Museum.) [67]

Commonwealth of Australia: Council for Scientific and Industrial Research. Bulletin No. 145: Friction and Lubrication Report No. 1-4. The Theory of Metallic Friction and the Role of Shearing and Ploughing; ii. The Friction of Thin Metallic Films. By Dr. F. P. Bowden and Dr. D. Tabor. Pp. 59. Pamphlet No. 109: Studies of the Physiology and Toxicology of Blowflies. 8: Rate of Ammonia Production by Larvæ of *Lucilia cuprina* and its Distribution in this Insect; 9: The Enzymes responsible for Ammonia Production by Larvæ of *Lucilia cuprina*. By F. G. Lennox. Pp. 64. (Melbourne: Government Printer.) [67]

U.S. Department of Agriculture. Circular No. 639: Insect Pests of Cigar-Type Tobaccos in the Southern Districts. By F. S. Chamberlin and A. H. Madden. Pp. 54. (Washington, D.C.: Government Printing Office.) 15 cents. [67]