

in other non-legume nodule-forming genera. The distinctiveness of the *Casuarina* organism is thus confirmed. The roots springing from the nodule lobes are shown to be characterized by upward growth and in this to resemble remarkably closely the corresponding roots of *Myrica*. Nodulated plants of *Casuarina* are able to grow vigorously in culture solutions free of combined nitrogen, showing that fixation of atmospheric nitrogen occurs, amounting in *C. cunninghamiana* to 50 mgm. per plant during six months of active growth. The evidence indicates that the fixation occurs in the nodules, and that these have exactly the same functional significance as those of legumes (*Ann. Bot.*, N.S., 21, 373; 1957).

Annual Variation of Sporadic Meteors

In a paper on the theory of the annual variation of sporadic meteors (*Pub. Astron. Soc. Japan*, 8, Nos. 3-4; 1956), Tadayoshi Murakami, of the University of Hiroshima, explains that his reduction of the annual variation was undertaken to verify his drift motion hypothesis of interstellar meteoric particles, published under the title "On the Drift Motion of the Interstellar Meteors in the Vicinity of the Solar System" (*Mem. Oriental Astron. Assoc.*, No. 152; 1954). In the present paper the author admits that most of the meteoric particles for sporadic meteors move together with the solar system, the variation being governed mainly by the altitude of the apex of the Earth's way. A comparison between the meteor rate deduced from observation and the altitude of the meteor apex shows that the relation is simple, and a theory is developed to explain this fact. While admitting that there is a discrepancy between theory and observation, it is pointed out that this can be ascribed to the irregular distribution of the density of the meteoric particles. The relation between the number of meteors m_c and the zenith distance of the meteor apex can be expressed by the empirical formula $m_c = 12.6 \cos \zeta + 6.3$, where $76^\circ < \zeta < 104^\circ$. The number of meteors calculated from this formula shows a satisfactory agreement between the observed and calculated variations (*Pub. Astron. Soc. Japan*, 8, 87; 1956). Although the true distribution of meteors is very different from uniform, as shown by the work of Lovell, Prentice, Hawkins and Aspinall, the author contends that, for a first approximation, uniformity of distribution must be postulated, irregularities of distribution being considered in the next step. On this assumption he derives a formula similar to that derived by Davidson (*J. Brit. Astron. Assoc.*, 24, 352; 1914). The value of the heliocentric velocity obtained is 58.5 km./sec., which does not agree with modern determinations of meteor velocities. It is admitted that the subject requires further consideration but the results suggest that there is unevenness of density distribution of meteoric particles.

University News :

Exeter

THE following appointments in the University of Exeter have recently been made: Mr. A. Stuart, to the newly created chair of geology; Dr. K. E. Grew, to be reader in physics; G. A. Duller, as assistant lecturer in mathematics; Dr. H. P. Mulholland, as senior lecturer in mathematics; D. J. Stone, as lecturer in mathematical statistics; Dr. R. J. Williams, as lecturer in physical chemistry.

Announcements

SIR SOLLY ZUCKERMAN, Sands Cox professor of anatomy in the University of Birmingham, has been awarded the Cross of Chevalier in the French national order of the Légion d'Honneur.

THE Castner Gold Medal of the Society of Chemical Industry has been awarded for 1958 to Dr. R. Holroyd, deputy chairman of Imperial Chemical Industries, Ltd. The Medal was instituted to commemorate the work of Hamilton Young Castner and is one of the Society's senior awards. It is awarded every two years.

TRINITY College, Cambridge, offers entrance exhibitions to male students of universities in the British Commonwealth to enable them to read for the degree of B.A. or LL.B., or for a diploma. Further information can be obtained from the Senior Tutor, Trinity College, Cambridge.

THE *New Zealand Journal of Science and Technology* is to be replaced at the beginning of 1958 by the *New Zealand Journal of Agricultural Research* (bi-monthly), the *New Zealand Journal of Geology and Geophysics* and the *New Zealand Journal of Science* (both quarterly).

AN exhibition of laboratory apparatus and techniques will be held in the College of Science and Technology, Sackville Street, Manchester, on December 18, during 2-8 p.m., and on December 19 during 10 a.m.-8 p.m.

A HALF-DAY conference on "Production Control", organized by the Industrial Applications Section of the Royal Statistical Society, will be held on December 13 at the London School of Hygiene and Tropical Medicine, Keppel Street, London, W.C.1. The conference starts at 2 p.m. Further information can be obtained from A. N. James, Wynyates, Church Road, Watford, Herts.

THE Institute of Physics has arranged a three-day conference on "Nuclear Fuel Cycles", to be held at the Institution of Civil Engineers during January 15-17, 1958. Further details can be obtained from the Institute of Physics, 47 Belgrave Square, London, S.W.1.

THE 128th course of six Christmas lectures "adapted to a juvenile auditory" is to be delivered at the Royal Institution on December 28 and 31, 1957, and January 2, 4, 7 and 9, 1958, at 3 p.m., by Dr. Julian S. Huxley and Mr. James Fisher on the subject of "Birds". The lectures will deal with "Birds in the Animal Kingdom", "Birds and Flight", "Birds Past and Present", "Birds Rare and Common", "Bird Migration and Navigation", "Bird Watching". The first lecture will be given by Dr. Huxley and the remaining five by Mr. Fisher. Applications for tickets (juveniles, aged 10-17, £1; adult non-members, £2) should be addressed to the Royal Institution, 21 Albemarle Street, London, W.1.

ERRATUM. We regret to find that mistakes have occurred in numbering the axes of the graph which accompanied the communication entitled "Vitamin B₁₂ in Marine Ecology" by M. R. Droop, in *Nature* of November 16, p. 1041. The ordinate graduations (number of cells per ml.) should be 10⁵, 10⁶ and 10⁷ (reading upwards); the abscissa graduations (vitamin B₁₂ (μg./ml.)) should be 0.1, 1.0 and 10 (reading left to right) and these numbers should appear immediately below the marks on the horizontal axis.