

urea starting with carbon dioxide and ammonia. Applying the device of the hot and cold tube, carbon dioxide in presence of ammonia in excess and with thoria as catalyst, gave a 19 per cent. conversion into

urea.—M. Gignoux and P. Fallot: The marine Pliocene on the Mediterranean coasts of Spain.—A. Guilliermond: Remarks on the formation of chloroplasts in the bud of *Elodea canadensis*.—G. André: The filtration of plant juices. Comparative analyses of juice expressed from the potato, after clarification by the centrifuge, filtration through porous porcelain filter, and filtration through collodion. In the last case, the proportions of nitrogen and phosphorus present are reduced.—Gabriel Bertrand and B. Benzon: The importance of zinc in the food of animals. Experiments on mice.—H. Vallée and H. Carré: The degree of infection of apthous fever.—Georges Bourguignon: Double chronaxy and a double motor point in certain human muscles.

SYDNEY.

Linnean Society of New South Wales, June 28.—Mr. G. A. Waterhouse, president, in the chair.—W. F. Blakely: The Loranthaceæ of Australia, Part ii. A revised classification of the Loranthaceæ, based on that of Engler, is put forward. The most notable changes in the nomenclature affect the genus *Atkinsonia* which is displaced by *Gaiadendron*, while the species under *Loranthus*, with versatile anthers, are transferred to *Phrygilanthus*.—Dr. R. J. Tillyard: Some New Permian Insects from Belmont, N.S.W., in the collection of Mr. John Mitchell. Nearly half the insect wings discovered at Belmont belong to the family *Permochoristidæ*. In association with these are two other Mecopteroid types, viz., *Belmontia* and a new type, described in this paper, which stands in the same relation to the Order *Diptera* that *Belmontia* does to the *Trichoptera* and *Lepidoptera*. In addition the first discovery of a true Lacewing (*Neuroptera*, *Planipennia*) of Palæozoic times is recorded. The remainder of the fauna consists of *Homoptera*, both *Auchenorrhyncha* and *Sternorrhyncha*, a new genus of the latter being described.—J. Mitchell: A new Gasteropod (fam. *Euomphalidæ*) from the Lower Marine Series of New South Wales. Description of a new species of *Platyschisma* from Allandale, where it occurs associated with *P. oculus*, *Eurydesma cordatum*, and *Aviculopecten mitchelli*.—Vera Irwin-Smith: Notes on Nematodes of the genus *Physaloptera*. Part iii. The *Physaloptera* of Australian Lizards. This paper deals with specimens of *Physaloptera* contained in three collections. They were found to consist of two forms, one of which has been identified as *P. antarctica* Linstow var. *typica*. The other has been treated as a new variety of the same species. Linstow's brief and inadequate diagnosis of the species has been supplemented by a detailed description. The rest of the paper is devoted to a special study of the female reproductive organs, in which it is pointed out that the practice of helminthologists of basing specific distinctions, in this group, upon the dimensions and arrangement of these parts is not reliable, since very considerable variations have been found within the one species.—J. McLuckie: Studies in Symbiosis. i. The Mycorrhiza of *Dipodium punctatum* R.Br.

Royal Society of New South Wales, July 5.—Mr. C. A. Sussmilch, president, in the chair.—A. R. Penfold: Observations respecting some essential oils

from *Leptospermum Liversidgei*. The variation in the essential oils obtained from a well-known Tea Tree (*Leptospermum Liversidgei*) is tabulated as follows:—

	Yield.	Specific Gravity 15° C.	Optical Rotation.	Refractive Index.	Solubility in 70 per cent. Alcohol.	Citral.	Citronellal.	
No. 1	Per cent.					Per cent.	Per cent.	
No. 1	0.8	0.8960	+ 6.2°	1.4854	1 in 1.5 vols.	75	..	type "b"
No. 2	0.5	70	type "c"
No. 3	0.25	0.8885	+12.10°	1.4822	insol. 10 vols.	46	..	type "a"
No. 4	0.33	0.8905	+12.75°	1.4820	ditto.	46	..	type "a"
No. 5	0.55	0.8826	+11.2°	1.4603	1 in 1.5 vols.	..	82	type "c"
No. 6	0.6	0.8910	+ 7.25°	1.4832	ditto.	70	..	type "b"

The author is inclined to the opinion that there are probably three forms of this shrub, and points out that the types "b" and "c" are of great economic importance. The type "a" (the original one) is of very little commercial value, hence the importance of the other types, particularly as botanical diagnosis has so far failed to distinguish them.—A. R. Penfold and F. R. Morrison: Preliminary note on a new Stearoptene (probably a phenol ether) occurring in some essential oils of the *Myrtaceæ*. The authors announced the isolation of a beautifully crystalline solid of a yellow colour from the essential oils of *Bækea crenulata* and *Darwinia grandiflora*. It has a melting-point of 103-104° C., molecular formula $C_{13}H_{18}O_4$, and contains two methoxy groups. It is apparently a phenol ether. It has, so far, only been obtained in small quantity, amounting to 6 per cent. in the former, and 2 per cent. in the latter oils, but it is anticipated that other essential oils at present being investigated will yield it in greater amount.—J. K. Taylor: A chemical and bacteriological study of a typical wheat soil of New South Wales. Monthly determinations of soil moisture, bacterial numbers, nitrates, and nitrifying power were made in soil from various plots at Wagga Experiment Farm. The bacterial numbers, nitrates and nitrifying power were greater in summer than in winter in spite of the partial drying out of the soil. The general order of merit of the plots for bacterial activity and accumulation of nitrates was cultivated fallow, cropped land, uncultivated fallow, and grass land. The bacterial numbers are comparable with those from soils from similar climatic regions but the nitrifying power is not particularly good and fluctuated curiously from month to month.

Official Publications Received.

Annals of the Astrophysical Observatory of the Smithsonian Institution. Vol. 4. (Publication No. 2661.) Pp. xii+390. (Washington: Smithsonian Institution.)

The British Mycological Society. Transactions, 1920. Vol. 7, Part 4. Edited by Carleton Rea and J. Ramsbottom. Pp. 221-324. (London: Cambridge University Press.) 12s. 6d.

Memoirs of the Asiatic Society of Bengal. Vol. 6: Zoological Results of a Tour in the Far East. Edited by Dr. N. Annandale. Part 7. Pp. 397-433+plates 15-17. 2 rupees; 3s. Part 8. Pp. 435-459+plates 18-21. 2 rupees; 3s. Vol. 7, No. 4: Introduction to the Study of the Fauna of an Island in the Chilka Lake. By Dr. N. Annandale. Pp. 257-319+plates 7-11. 3 rupees; 4s. 6d. (Calcutta: Asiatic Society of Bengal.)

The Newcomen Society for the Study of the History of Engineering and Technology. Transactions, Vol. 1, 1920-1921. Pp. 88+18 plates. (London: Newcomen Society.) 20s.

University of Colorado Bulletin. Vol. 22, No. 3: General series, No. 180: Catalogue, 1921-1922. Pp. 426. (Boulder, Colo.: University of Colorado.)

Experimental Researches and Reports published by the Department of Glass Technology, The University, Sheffield. Vol. 4, 1921. Pp. ii+118. (Sheffield: The University.)