

garrie, in sub-arid Western Australia. This paper deals with the westerly trend of the lake basins, the cutting back of the hard, rocky bluffs, and the development of parallel sand ridges with well-marked intervening valleys, running in an east-west direction. This latter feature has not before been discussed in detail.—R. A. Keble: The significance of lava residuals in the development of the Western Port and Port Phillip drainage systems. The older and newer basalts of Victoria flowed down the valleys, partly occupying or completely submerging them. Subsequent erosion took place on the softer flanking rocks in the case of the confined lava-fields. In the case of the extensive lava-fields erosion proceeded along the pre-basalt watersheds, since they were the first to be exposed by vertical erosion, and afforded the line of least resistance. It is submitted that it is possible to reconstruct from these data the pre-basalt stream systems.—F. Chapman: The age of the Bairnsdale Gravels, with a note on the included fossil wood. The sheet of gravel covering the uplifted coastal plain of the Victorian coast from the hill-ranges of South Gippsland on the west to Cape Howe on the east is described, and shown to be of Wernikoian (Upper Pliocene) age. Its terrestrial origin is proved by the physiography of the surrounding country and the nature of the deposits, whereas, if of marine origin, the sand would have been largely removed by continuous tidal action. The included fossil (silicified) wood is referred to two types of Eucalypts, the nearest allies of which are yellow box (*Eucalyptus melliodora*) and white stringy bark (*E. piperita*). The wood is derived from an older formation, Kalimnan (Lower Pliocene) or even Janjukian (Miocene).

CALCUTTA.

Asiatic Society of Bengal, July 3.—J. N. Rakshit: The isolation of porphyroxine. A solution of opium in lime-water is shaken up with ether, and the ethereal extract dried over calcium chloride and evaporated; the residue thus obtained is washed with boiling petroleum, dissolved in dilute hydrochloric acid, filtered, the filtrate made alkaline with sodium bicarbonate, again filtered, and the alkaline filtrate extracted with chloroform. On evaporation of the chloroform extract crude porphyroxine is obtained, which, when crystallised from alcohol, gives the pure alkaloid as a pinkish-brown powder.—M. N. Saha: A new theorem in elasticity. From the equations of motion of an elastic system, a new theorem has been deduced expressing the difference between mean kinetic and potential energies. The theorem is analogous to Clausius's Virial theorem in the kinetic theory of gases, and appears to be of great promise for the relative estimation of kinetic and potential energies in various cases of vibration.—M. N. Saha and S. Chakravarti: The pressure of light. A series of experiments which were recently carried out at the Sir T. N. Palit Laboratory of Science for demonstrating, and qualitatively estimating, the pressure of light has been described. The apparatus is a modification of Hull's apparatus for measuring the pressure of light, and is so designed that all disturbing effects have been eliminated. Previous workers used the arc as the source of light, but this being very unsteady, a tungsten filament lamp of 3000 c.p., which gives almost as intense a light as the arc and is absolutely steady, has been used. The observed and calculated pressures are in good agreement.—G. de P. Cotter: The geotectonics of the Tertiary Irrawaddy basin. It has been found necessary, through recent field work in the Minbu and Pakokku districts, to modify previous ideas of the Tertiary history of Burma. The author believes that there is no unconformity, except of an entirely local character, between the Pegus and Irra-

NO. 2549, VOL. 102]

waddys of the Irrawaddy basin. The supposed unconformities of Yenangyat and Minbu are partly to be explained as missing beds cut out by fold faults. There is evidence of Pleistocene and recent upheaval in the Irrawaddy basin.—E. W. Vredenburg: Considerations regarding a possible relationship between the charnockites and the Dharwars. Attention is directed to the possibility of regarding the charnockites as metamorphosed representatives of the igneous members of the Dharwars.—E. W. Vredenburg: Note on the occurrence of *Dolium variegatum*, Lamarck, at Maskat, with considerations on its geographical distribution at the present day and in former geological times. *Dolium variegatum*, Lamarck, hitherto known as a recent shell only from Australia, has been noticed in the Indian Museum amongst a collection of shells from Maskat. In a fossil condition it is known from the Upper Tertiary of Java and of the Makran, indicating that its distribution, discontinuous at the present day, was continuous in former geological times.

BOOKS RECEIVED.

- Organic Chemistry for Advanced Students. By Prof. J. B. Cohen. Second edition. 3 parts. Pp. viii+366; vii+435; vii+378. (London: E. Arnold.) 54s. net.
An Introductory Treatise on Dynamical Astronomy. By Prof. H. C. Plummer. Pp. xix+343. (Cambridge: At the University Press.) 18s. net.
Alternating-current Electrical Engineering. By P. Kemp. Pp. xi+494. (London: Macmillan and Co., Ltd.) 17s. net.
A History of Chemistry. By Prof. F. J. Moore. Pp. xiv+202. (New York: McGraw-Hill Book Co.; London: Hill Publishing Co., Ltd.) 12s. 6d. net.

CONTENTS.

	PAGE
Waste-paper and Paper-waste	1
The Constitution of Coal. By Prof. H. Louis	2
Analysis and Geometry. By G. B. M.	2
Our Bookshelf	3
Letters to the Editor:—	
German Naturalists and Nomenclature.—Lord Wal-	
ingham, F.R.S.	4
The Value of Insectivorous Birds.—Dr. Wm. Eagle	
Clarke	4
A Mistaken Butterfly.—Thos. Steel	5
Fertilisers after the War. By Dr. E. J. Russell, F.R.S.	5
The Value of the Herring as Food. By E. J. A.	6
The Metalliferous Ores of the Iron and Steel	
Industry. By Prof. H. C. H. Carpenter, F.R.S.	7
Prof. Bertram Hopkinson, F.R.S. By Sir J. A.	
Ewing, K.C.B., F.R.S.	8
Notes	9
Our Astronomical Column:—	
Infra-red Stellar Spectra	13
Mount Wilson Observatory Report	13
The Development of New Industries	13
The British Glass Industry	15
High-temperature Appliances	16
Water-power and its Utilisation	16
University and Educational Intelligence	18
Societies and Academies	19
Books Received	20

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