

rocks.—M. Friedmann: The vortices in a liquid at variable temperature.—L. Hartmann: The determination of the mechanical equivalent of heat by the method of Hirn. It is shown that the hypothesis which forms the basis of the determination of Hirn is not confirmed by experiment.—C. Camichel: The amplitude of the odd harmonics in the strokes of a hydraulic ram.—G. A. Le Roy: A reagent for free chlorine in drinking water. The amount of free chlorine in drinking water which has been purified by means of hypochlorites is at present controlled by the well-known iodide of starch reaction. The new reagent suggested, which has a higher sensibility than the iodide of starch, is the chlorohydrate of hexamethylparaminotriphenylmethane. The violet colour is formed immediately, and its intensity is proportional to the amount of free chlorine present. Water containing only three hundred millionths of chlorine gives a visible reaction with the new reagent; about three times this quantity is necessary to show the iodide of starch reaction. Details for the preparation and use of the reagent are given.

## CAPE TOWN.

Royal Society of South Africa, July 19.—Dr. L. Péringuey, president, in the chair.—E. J. Goddard: *Pelodrilus africanus*, a new Haplotaxid from South Africa. The species here described constitutes the first representative of the family Haplotaxidæ recorded from South Africa. Of the two genera included within this family, one—Haplotaxis—is represented by fresh-water species in Europe, North America, and New Zealand, while the remaining genus—Pelodrilus—is represented in New Zealand by a species inhabiting damp earth. The African species is to be included in the latter genus. The specimens were obtained in mud on Sneeuw Kop, near Wellington, Cape Province, at an elevation of 5000 ft. above sea-level. The length varies from 20 to 40 mm.—Paul A. van der Bijl: Note on *Polysaccum crassipes*, a common fungus in Eucalyptus plantations around Pretoria. *Polysaccum crassipes* is so common in Eucalyptus plantations around Pretoria that it appeared interesting to determine in what relation it stood to the Eucalypti. The investigation was begun at the Botanical Laboratories, Pretoria, and afterwards concluded at the Natal Herbarium, Durban. The morphology of the fungus is briefly dealt with and followed by suggestions which indicate that the relation between the fungus and host is one of symbiosis.

## CALCUTTA.

Asiatic Society of Bengal, August 2.—Dr. N. Annandale: Zoological results of a tour in the Far East. I., The Mollusca of Lake Biwa, Japan. Lake Biwa, as might be expected from its geographical position and from what is known of the fauna of Japan generally, seems to be, so far as the Mollusca are concerned, the meeting-place of two lines of migration, one coming from the north, the other from the south.

## BOOKS RECEIVED.

Index of Genera and Species referred to, and an Index to the Plates, in the *Ibis* (seventh, eighth, and ninth series), 1895-1912. Pp. 513. (London: British Ornithologists' Union; W. Wesley and Son.) 1l. 12s. 6d.

Cradles or Coffins? By J. Marchant. Pp. 96. (London: C. A. Pearson, Ltd.) 1s. net.

First Course in General Science. By Prof. D. Barber and others. Pp. vii+607. (New York: H. Holt and Co.)

Cleator and Cleator Moor, Past and Present. By

NO. 2446, VOL. 98]

Rev. Cæsar Caine. Pp. xviii+475. (Kendal: T. Wilson.) 21s. net.

Earliest Man. By F. W. H. Migeod. Pp. xii+132. (London: Kegan Paul and Co., Ltd.) 3s. 6d. net.

The Principles of Electrical Engineering and their Application. By Prof. G. Kapp. Vol. i., Principles. Pp. xii+356. (London: E. Arnold.) 15s. net.

The Elements of Non-Euclidean Plane Geometry and Trigonometry. By Prof. H. S. Carslaw. Pp. xii+179. (London: Longmans and Co.) 5s. net.

Royal Society of Arts. Cantor Lectures on Optical Glass. By Dr. W. Rosenhain. (London: Royal Society of Arts.) 1s.

Raphael Meldola: Reminiscences of his Worth and Work. Edited by J. Marchant. Pp. xv+225. (London: Williams and Norgate.) 5s. net.

Tree Wounds and Diseases: their Prevention and Treatment, with a special chapter on Fruit Trees. By A. D. Webster. Pp. xx+209. (London: Williams and Norgate.) 7s. 6d. net.

Mathematical Papers for Admission into the Royal Military Academy and the Royal Military College. February-June, 1916. By R. M. Milne. Pp. 30. (London: Macmillan and Co., Ltd.) 1s. net.

Manual of Russian Commercial Correspondence. By M. Sieff. Pp. xx+232. (London: Kegan Paul and Co., Ltd.) 3s. 6d. net.

## CONTENTS.

PAGE

<b>A System of Physical Chemistry.</b> By Prof. F. G. Donnan, F.R.S. . . . . .	25
<b>The Flora of All Africa.</b> By Dr. W. Botting Hemsley, F.R.S. . . . . .	26
<b>Christianity in Partibus . . . . .</b>	26
<b>Our Bookshelf . . . . .</b>	27
<b>Letters to the Editor:—</b>	
The Group Vermidea.—Dr. Sidney F. Harmer, F.R.S. . . . . .	28
The Refractometry of Lenses.—L. C. Martin . . . . .	28
An Oil Drive for Equatorial Telescopes. ( <i>Illustrated.</i> ) —Scriven Bolton . . . . .	28
On the "Wolf-note" of the Violin and 'Cello.— A. M. Tyndall; G. W. White . . . . .	29
<b>Birds in Studio and on the Hillside.</b> ( <i>Illustrated.</i> ) . . . . .	30
<b>Scientific Method in Brewing Practice . . . . .</b>	31
<b>The British Association at Newcastle . . . . .</b>	33
Section B.—Chemistry—Opening Address (Abridged) by Prof. G. G. Henderson, D.Sc., LL.D., F.R.S., President of the Section . . . . .	34
<b>Notes . . . . .</b>	37
<b>Our Astronomical Column:—</b>	
Measurement of Close Solar Lines . . . . .	40
Spectra and Absolute Magnitudes of Stars . . . . .	41
Observations of Minor Planets in France . . . . .	41
<b>The Maritzburg Meeting of the South African Association.</b> By C. F. J. . . . . .	41
<b>Economic History of the United States . . . . .</b>	42
<b>University and Educational Intelligence . . . . .</b>	43
<b>Societies and Academies . . . . .</b>	43
<b>Books Received . . . . .</b>	44

Editorial and Publishing Offices:

MACMILLAN & CO., LTD.,

ST. MARTIN'S STREET, LONDON, W.C.

Advertisements and business letters to be addressed to the Publishers.

Editorial Communications to the Editor.

Telegraphic Address: PHUSIS, LONDON.

Telephone Number: GERRARD 8830.