

plankton animals, including the copepods, which feed on the diatoms, the copepods in their turn serving as food for nearly all young fish and certain adults, such as the herring and mackerel.

The maxima of the various genera show much agreement with the records from the English Channel, but the interesting fact is brought out that *Skeletonema*, a coastal diatom enormously abundant at Kiel and very common in the Channel, is apparently quite rare in the Irish Sea even close to land, whilst it is the commonest form in some of the lochs in the west of Scotland.

The copepods *Calanus* and *Temora*, which contain a large amount of oil, occur at times in enormous numbers and form an important food for the herring and mackerel, which follow them in shoals and feed voraciously on them disappearing when the copepods go. This is a good illustration of the prominent truth brought out by this plankton investigation that, although there is a very large amount of food available in the sea, it is not evenly distributed, and that all animals feeding on the plankton must seek out the food they require. The varying distribution of the plankton is thus the chief cause of the movement and migrations of those animals which feed on it.

In the concluding remarks various theories of the origin of these plankton maxima are discussed, the author inclining to the view that here sunlight plays the most important part, and that increased alkalinity of the sea being due to the reduction of carbon dioxide is the result, and not the cause, of the activity of the plankton.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—Dr. F. G. Chandler, of Jesus College, has been awarded the Raymond Horton-Smith prize for his thesis on "Empyema."

LONDON.—A Mitchell studentship of 100*l.* is offered to a graduate having the necessary qualifications to study and investigate some definite feature of business or industrial organisation at home or abroad. Applications will be received by the Academic Registrar not later than December 31 next.

The following are among the public lectures at University College arranged for during the new term:—"Economy of Fuel in Private Households," A. H. Barker, on Wednesday, October 9, at 7 p.m.; "The Scientific Problems of Radio-telegraphy," Prof. J. A. Fleming, on Wednesdays, October 30, November 6, 13, 20, and 27, and December 4, at 5 p.m.; "The Nature and Use of 'Tones' in Chinese and Other Languages," D. Jones, on Monday, October 21, at 5 p.m.; "The Nature of Language," H. E. Palmer, on Thursdays, October 10, 17, 24, and 31, November 7 and 14, at 5 p.m.; "The Problem of International Language" (with special reference to Esperanto and Ido), H. E. Palmer, on Thursdays, November 21 and 28, December 5 and 12, at 5 p.m.; "Wound Shock," Prof. W. M. Bavliss, on Fridays, November 22 and 29, at 5 p.m.; and "French Science" (with lantern illustrations), Prof. H. L. Joly, on Tuesdays, October 22 and 29 and November 5, at 5 p.m.

MR. C. E. ASHFORD, headmaster of the Royal Naval College, Dartmouth, has been appointed Adviser on Education to the Board of Admiralty for the duration of the war, continuing in his former position.

DR. W. M. POLK, late dean of the Medical College of Cornell University, has bequeathed the sum of

NO. 2553, VOL. 102]

100*l.* to the University for the continuation of the John Metcalf Polk scholarship in medicine.

THE current calendar of the Edinburgh and East of Scotland College of Agriculture, copies of which can be obtained on application to the secretary, 13 George Square, Edinburgh, contains full details of the various available courses of instruction in agriculture, horticulture, and forestry. All the courses of study, it may be noted, are open to women.

THE following lectures have been arranged for delivery at the Royal Sanitary Institute by the Child-Study Society:—Thursday, October 10, "Training the Children for Citizenship in America," Mrs. K. Boulker; Thursday, November 7, "The Girl Guide Movement," Lady Baden-Powell; and Thursday, November 28, "Sight-saving Schools," N. Bishop Harman.

THE Universities Bureau of the British Empire has compiled a handbook of the "Universities of the United Kingdom of Great Britain and Ireland," which the Board of Education has published as No. 33 of its Educational Pamphlets at the price of 9*d.* net. In the spring of 1918 the Council of National Defence of the United States invited the universities of the United Kingdom to send delegates to visit American universities so as to establish relations of co-operation and co-ordination. The present handbook was prepared to place the delegates in a position to supply information about the organisation and resources of the individual universities of the United Kingdom. The descriptions in it relate to normal times, and the figures as to the number of teachers and students are for the last normal session 1913-14. The pamphlet states that inquiries regarding any matters connected with university education may be addressed to the Hon. Secretary of the Bureau at the Imperial Institute, London, S.W.7.

SOCIETIES AND ACADEMIES.

CAPE TOWN.

Royal Society of South Africa, July 17.—Dr. A. Jasper Anderson in the chair.—A. Ogg: The electrostatic deflection in a cathode-ray tube. In the ordinary Thomson cathode-ray tube for determining the value of e/m for cathode rays, the irregularity of the electrostatic field near the edges of the charged plates has to be allowed for. It is interesting to find the electrostatic deflection when the rays are projected parallel to the plates, but at some distance from them. Methods for making the calculation were given.—Prof. J. D. F. Gilchrist: Note on a disease in the snoek (*Thyrsites atum*). The snoek, one of the most important Cape fishes from an economic point of view, is well known to be found frequently in a "pap" or soft condition. This is attributed by the fishermen to the fact that it has not been properly killed on capture, the consequence being that it struggles about in the bottom of the boat, and, in doing so, bruises the flesh to such an extent as to produce the condition mentioned. This condition may occur a few hours after the fish has been caught, and may quickly become so marked that the whole of the muscles, especially of the back, appear quite soft and liquid. The process is believed to be totally distinct from decay by putrefaction or by softening of the flesh by exposure to the heat of the sun, which also frequently occurs. As it was suspected that this condition might be brought about by the presence and rapid multiplication of some protozoal parasite in the muscles, the diseased tissue was examined microscopically, and after staining with methylene-blue and other reagents the presence of very numerous spore-like bodies was

detected. These were all arranged in groups of four, and occasionally, on fixation by heat, long filaments were shot out from them, showing that they were Protozoa belonging to the group of Cnidosporidia, which are known to produce diseased conditions in the muscular and other tissue of fish. The groups of four bodies with filaments suggest the family of the Chloromyxidæ with their four polar capsules, but there is reason for believing that they represent spores, not polar capsules, and, if so, they probably belong to a new form of the Microsporidia.—Ethel M. Doidge: Mycological notes. I.

CALCUTTA.

Asiatic Society of Bengal, August 7.—Maude L. Cleghorn: A note on the vitality and longevity of silkworm moths during the cold and rainy seasons in Bengal. An account of experiments carried out during the past two years on the vitality and longevity of silkworm moths. It is shown that moths which emerge in December and January live longer, while those bred in the rains and hatched out in August and September exist for only a few days. The results of the experiments, which are shown in tabular form, are compared with Tower's observations on the effect of temperature and moisture on certain Chrysomelid beetles.—Dr. B. Prashad: Zoological results of a tour in the Far East. Echiuroids from brackish water, with the description of a new marine species from the Andamans. Three species of the genus *Thalassema* have already been recorded from brackish water on the coasts of the Bay of Bengal and the Gulf of Siam. The anatomy of these is described in detail, and special attention is paid to the structure of the proboscis, which exhibits certain peculiarities in these forms. A progressive modification can be traced in the three species, probably in connection with life in peculiarly dense mud. A new marine species of the genus from the Andamans is also described.—L. Chopard: Zoological results of a tour in the Far East. Les Orthoptères cavernicoles de Birmanie et la Péninsule Malaise. All the Orthoptera at present known from limestone caves in the Malay Peninsula and Burma were discussed, and most of them figured. In this fauna one species of earwig, five species of cockroaches, and seven species of wingless Phasgonuridæ are included.—Dr. N. Annandale and Dr. B. Prashad: Note on the taxonomic position of the genus *Camptoceras*, Benson, and *Lithotis japonica*, Preston (*Mollusca pulmonata*). The genus *Camptoceras* was described by Benson in 1843 to include a remarkable fresh-water mollusc from Rohilkhand; two other species were described by Blandford in 1871 from near Dacca. The genus has not been rediscovered in India, but a species has recently been found in Japan. Particulars are given as to the animal and the radula of this species, and the conclusion is drawn that the genus is allied to *Planorbis* and belongs to the sub-order Basommatophora. The shell recently described by Preston under the name *Lithotis japonica*, is shown to have no relation to the Indian species of *Lithotis*, but to be closely allied to *Limnæa*. A new genus is proposed to include it and the Sumatran species *Limnæa brevispira*, von Martens.

BOOKS RECEIVED.

Equilibrium and Vertigo. By Dr. I. H. Jones. With an Analysis of Pathologic Cases by Dr. L. Fisher. Pp. xv+414. (Philadelphia and London: J. B. Lippincott Co.) 21s. net.
The Ledge on Bald Face. By Major C. G. D. Roberts. Pp. 255. (London: Ward, Lock, and Co., Ltd.) 5s. net.

NO. 2553, VOL. 102]

Eastern Exploration: Past and Present. By Dr. W. M. Flinders Petrie. Pp. vi+118. (London: Constable and Co., Ltd.) 2s. 6d. net.

Tri-lingual Artillery Dictionary. By E. S. Hodgson. Vol. i., English-French-Italian. Pp. viii+92. (London: C. Griffin and Co., Ltd.) 5s. net.

Modern Fruit-growing. By W. P. Seabrook. Pp. xliii+172. (London: The Lockwood Press.) 4s. 6d. net.

A Bibliography of Fishes. By B. Dean. Vol. ii. Enlarged and edited by C. R. Eastman. Pp. 702. (New York: American Museum of Natural History.)

Contouring and Map-reading. By B. C. Wallis. Pp. 48. (London: Macmillan and Co., Ltd.) 2s.

Macmillan's Geographical Exercise Books. vii., Physical Geography, with questions. By B. C. Wallis. Pp. 48. (London: Macmillan and Co., Ltd.) 1s. 6d.

Annual Chemical Directory of the United States. Second edition. Pp. 534. (Baltimore: Williams and Wilkins Co.) 5 dollars net.

Simplified Method of Tracing Rays through any Optical System of Lenses, Prisms, and Mirrors. By Dr. L. Silberstein. Pp. ix+37. (London: Longmans and Co.) 5s. net.

Differential Equations. By Dr. H. Bateman. Pp. xi+306. (London: Longmans and Co.) 16s. net.

CONTENTS.

PAGE

The Economy of Nature	81
Water Supplies for Rural Dwellings	81
A New Zoological Station	82
Drugs and their Preparations	83
Our Bookshelf	83
Letters to the Editor:—	
The Study of English in Italian Universities.—	
Edward Bullough	84
The "Salary" of the Lecturer.—Capt. E. R. Marle	84
The Arboreal Descent of Man.—Prof. V. Giuffrida-	
Ruggeri	85
A Curious Rainbow. (Illustrated.)—W. P. H.-S.	85
German Industry and the War. II.	85
The War and Psychology. By T. H. Pear	88
The Total Solar Eclipse of June 8, 1918	89
Modern Studies in Schools	90
Insurance and Annuities for College and University	
Teachers	91
On Colour Sensitised Plates. By Chapman Jones	92
Notes	93
Our Astronomical Column:—	
Observations of Solar Prominences	97
Parallaxes of Helium Stars	97
Stellar Distances and Spectral Types	97
Entomological Research in Australia. By G. H. C.	97
The Promotion of Textile Industries. By R. H. P.	98
Irish Sea Plankton	98
University and Educational Intelligence	99
Societies and Academies	99
Books Received	100

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