

fortunate enough to succeed in cultivating this protozoal parasite in test-tubes under certain conditions and in watching the minute spleen form develop into a long flagellate organism resembling one of the stages of a trypanosome, but which further study showed to belong to the closely allied herpetomonas. This discovery gave the required clue to the nature and probable life-history of the parasite, as similar organisms are found naturally in the digestive canals of certain flies, indicating that the infection is probably insect-borne. I spent the next year in studying the conditions favourable to the growth of the parasite in cultures, and for reasons into which I have not time to go I came to the conclusion that the homely bed-bug is the carrier of the disease. The fact which had by this time been established by Dr. Dodds Price, that two to four hundred yards is a sufficient distance to remove healthy lines from infected ones, is sufficient to exclude a flying insect such as a mosquito. At this time Major Patton, of the Bacteriological Department, was placed on special duty to work at the subject in Madras. After some two years' work he obtained a development of the parasite up to the flagellate stage in the digestive canal of bed-bugs fed on kala-azar patients with the parasites in their blood. Lt.-Col. Cornwall has recently confirmed these experiments, and although the final proof of communicating the disease by means of infected bed-bugs has not yet been furnished (experiments on human beings, such as were carried out in the case of malaria, not being justifiable in the deadly kala-azar), still the evidence incriminating these insects is sufficiently weighty to make it desirable to wage war upon them wherever the disease is present. Coco-nut oil applied to the runs of the bugs on walls, and to the buttons of mattresses, etc., where they often hide, is a useful measure for this purpose. As these insects can live for months without food, the way in which the infection clings to houses is well explained on my theory that they are the carriers of the disease.

Lastly, I come to the most important discovery regarding kala-azar, namely, that of a trustworthy cure of this formerly very deadly disease. Antimony preparations have proved to be of value in trypanosomiasis, and nearly two and a half years ago I decided to try intravenous injections of tartar emetic in kala-azar. Unfortunately, just at that moment I had no clinical facilities for testing my idea, and for six months I carried about sterile capsules of tartar emetic without being able to use them, a disability which will end when the Carmichael Hospital for tropical diseases is opened. Eventually I obtained the facilities I required, and soon saw reason to believe that the drug was proving effective. Imagine my disappointment when I read that two Italian doctors had recorded successes in the treatment of the African form of kala-azar with the very drug I was using in Calcutta, although the fact that I had independently discovered the treatment will save some of the credit for the Indian Medical Service. At any rate, I am now in the happy position of being able to say that, thanks to the kind help of Capt. H. N. Hume and Lt.-Col. O'Kinealy, no fewer than twenty-five consecutive cases of kala-azar, including three children, have been successfully treated in the European General Hospital by this method, and the most deadly disease of India, if not of the world, has now been largely conquered, as regards both prevention and cure, perhaps more completely than any other highly lethal disease known, as a direct result of the researches of the last twenty years.

In conclusion I cannot resist this opportunity of pointing the moral, namely, that no greater benefit

can arise than from successful medical research, and that no better use can be made of wealth than in endowing such research for the benefit of the present and all future generations. Bengal, and I would add Bihar, have already nobly responded to my appeal for endowments for the Calcutta School of Tropical Medicine, and when the terrible war is over we hope to have at least nine research workers in the new laboratories, instead of one poor man with routine professorial duties devoting such time as he can snatch to medical research.

#### UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—Dr. A. E. Shipley, F.R.S., master of Christ's College, has been elected Vice-Chancellor for the next academical year.

OXFORD.—A decree passed by Convocation on June 5 provides for the suspension of the Romanes lectureship until October 9, 1917, the moneys consequently undisposed of to be transferred to the Emergency Relief Fund of the University.

On the same day statutes passed Congregation empowering the board of the faculty of medicine to recognise certain examinations in natural science, and providing for the further promotion of higher studies in the University, with special reference to the proposed new degree of Doctor of Philosophy. The statutes respecting boards of electors to professorships were amended in some particulars.

Mr. T. R. Glover, fellow of St. John's College, Cambridge, has been appointed Wilde lecturer in natural and comparative religion for three years from October 10, 1917.

Prof. Emile Boutroux, Membre de l'Institut de France et de l'Académie Française, has been appointed Herbert Spencer lecturer for 1917.

Two courses of free public lectures have just been commenced at the School of Oriental Studies, London Institution, Finsbury Circus, E.C.2. One course, on "Religion in India and China," is being delivered by Dr. T. W. Rhys Davids, and the remaining lectures will be given on Tuesdays, June 12, 19, and 26; the other course, on "The Way to Buddhahood," by Prof. de la Vallée Poussin, is being delivered on Thursdays, June 7, 14, 21, and 28. The lectures begin at 5.30 in each case.

THE President of the Board of Education has appointed a Departmental Committee to inquire into the principles which should determine the construction of scales of salary for teachers in elementary schools, due regard being had to locality, duties, qualifications, sex, and other considerations consistent with the organisation of the teaching service throughout the country, on a system conducive to the efficiency of national education. The committee will be at liberty to illustrate any system of scales which it recommends by such specific sums of money as it thinks fit; but it is not asked to consider the question of the amounts by which existing scales of salary should be improved in particular areas, or the sources from which the amounts required for that purpose should be provided. The members of the committee are:—Sir H. L. Stephen (chairman), Miss M. M. Allan, Mr. J. W. Alsop, Dr. H. B. Brackenbury, Miss I. Cleghorn, Mr. C. W. Crook, Mr. W. R. Davies, C.B., Miss I. A. Dickson, H.M.I., Mr. A. J. Flavell, Mr. H. Mellish, Mr. H. Pearson, Mr. A. R. Pickles,

Mr. W. Pullinger, Mr. F. Roscoe, Mr. T. H. J. Underdown, Miss Hermione Unwin, the Rev. D. H. Williams, with Mr. A. H. Wood as secretary, to whom all communications should be addressed at the office of the Board of Education. Mr. Fisher intends also to deal with teachers in secondary, technical, and other schools by a further reference to a second committee connected with this committee in respect of both constitution and functions.

An illustrated brochure entitled "Women on the Land" has been issued in which a description of the training of women and girls for agricultural and market-garden work at "Craigendowie," Broughton, near Preston, is given. Under the Lancashire committee a month's training was provided for, but Mrs. Ritchings, who has undertaken the work of training the girls on her own estate, has wisely continued the course of instruction for a second month. The number of students taken at one time is about twelve, and probably it is possible to give much more thorough instruction in the use of tools with a small number of students than with the unduly large numbers which are sometimes crowded for a month into training centres. Although none of the women students at "Craigendowie" had had previous experience of agricultural work of any kind, the results seem to have been very successful, and the women have been drafted out to situations in Lancashire and Cheshire. The reports given by various training centres and the accounts received from farmers, which have been published from time to time in the *Journal of the Board of Agriculture*, show clearly that women are capable of doing valuable work on the land, provided that the farmers will give them a fair trial and a certain amount of preliminary instruction of a clear and practical kind. With the care of dairy cows and other stock women seem to have been particularly successful, though they have carried out satisfactorily almost every type of agricultural work. In view of the necessity for increased cultivation, the demand for women's work on the land will rapidly increase during this year, and it is of the greatest importance that it should be satisfactorily met. Training schools have fortunately been established in many counties, and if women can be assured of suitable accommodation and adequate wages, large numbers will doubtless take up an employment which has been re-discovered as healthy, interesting, and absolutely essential to the welfare of the nation.

### BOOKS RECEIVED.

Three Lectures on Experimental Embryology. By Dr. J. W. Jenkinson. With a Biographical Note by Dr. R. R. Marett. Pp. xvi+130. (Oxford: At the Clarendon Press.) 7s. 6d. net.

A Sketch Map of the Linguistic Areas of Europe. (London: E. Stanford, Ltd.) 2 guineas.

The War and the Nation: A Study in Constructive Politics. By W. C. D. Whetham. Pp. viii+312. (London: J. Murray.) 6s. net.

Rings for the Finger, from the Earliest Known Times to the Present. By Dr. G. F. Kunz. Pp. xviii+381+illustrations. (Philadelphia and London: J. B. Lippincott Co.) 28s. net.

The Home and the Family: An Elementary Text-book of Home Making. By Profs. H. Kinne and A. M. Cooley. Pp. vi+292. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd.) 3s. 6d. net.

Fresh-water Wonders and How to Identify Them. By J. H. Crabtree. Pp. 64. (London: C. H. Kelly.) 1s. 3d. net

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## DIARY OF SOCIETIES.

THURSDAY, JUNE 7.

ROYAL INSTITUTION, at 3.—The Art of the Biographer: A. C. Benson.  
 LINNEAN SOCIETY, at 8.—The Hooker Lecture on The Natural Classification of Plants: Prof. F. O. Bower.  
 CHEMICAL SOCIETY, at 8.—The Constitution of Internal Diazo-oxides (Diazo-phenols). Part ii.: G. T. Morgan and H. P. Tomlins.—The Determination of Ozone and Oxides of Nitrogen in the Atmosphere: F. L. Usher and B. S. Rao.—Thiocarbamide and Esters: J. Taylor.—The Phosphates of Calcium. Part iv. The Basic Phosphates: H. Bassett, jun.—Preparation of Secondary Arylamines free from Primary Amines: J. Thomas.—Some Double Compounds of Ferric Chloride with Ethers A. Forster, C. Coope, and G. Yarrow.—The Absorption Spectra of some Polyhydroxyanthraquinone Dyes in Concentrated Sulphuric Acid Solution and in the State of Vapour: D. B. Meek.—Action of Acetaldehyde Ammonia on Quinones: P. C. Ghosh.—The Exact Determination of Morphine in Complex Mixtures. Part i. A Collection and Revision of Data: A. Tingle.

FRIDAY, JUNE 8.

ROYAL INSTITUTION, at 5.30.—Industrial Applications of Electrons: Sir J. J. Thomson.  
 ROYAL ASTRONOMICAL SOCIETY, at 5.  
 PHYSICAL SOCIETY, at 5.—A Bridge Method of Comparing Fixed Inductances: T. Parnell.—The Radiation from Loaded Antennæ: Van der Pol.—A Demonstration of a Method of Preventing Sparking at a Rapid "Make and Break": Dr. A. Griffiths.

SATURDAY, JUNE 9.

ROYAL INSTITUTION, at 3.—The Electrical Properties of Gases: Sir J. J. Thomson.  
 ARISTOTELIAN SOCIETY, at 8.—(At Cambridge.)—The Conception of a Cosmos: Prof. J. S. MacKenzie.

SUNDAY, JUNE 10.

ARISTOTELIAN SOCIETY, at 8.—(At Cambridge.)—Symposium: Are the Materials of Sense Affections of the Mind?: Dr. G. E. Moore, W. E. Johnson, Prof. G. Dawes Hicks, Prof. J. A. Smith, and Prof. James Ward.

THURSDAY, JUNE 14.

MATHEMATICAL SOCIETY, at 5.30.

FRIDAY, JUNE 15.

INSTITUTION OF MINING ENGINEERS, at 11 a.m.—The Spontaneous Firing of Coal: Dr. J. S. Haldane.—The By-product Coking Process, its History, Development, and Application: E. Bury.—Acetylene Mine Lamps: W. Maurice.

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