

tively into the glass. Anodes of lead oxide or copper oxide are insoluble, and exhibit the same phenomena as platinum or graphite anodes.

Among other investigations, either completed or in course of progress, the following may be mentioned:—Anode rays, the Doppler spectrum in canal rays, determination of the constant c of the law of black-body radiation, the thermal expansion of metals at high temperatures, electrolytic valvular action, influence of chemical composition and heat treatment on the magnetic and electric properties of iron alloys.

E. S. HODGSON.

AWARD OF BEIT MEMORIAL FELLOWSHIPS.

THE trustees of the Beit Memorial Fellowships for medical research have elected the following to fellowships. Each fellowship is of the annual value of 250*l.*, payable quarterly in advance. The usual tenure is for three years, but the trustees have power in exceptional cases to grant an extension for one year. The general character of the research which each fellow proposes to follow, and the place of research, are indicated.

Dr. Ida Smedley, the processes involved in the formation of fat in the organism (the Lister Institute of Preventive Medicine). Dr. R. A. Chisolm: An investigation into the production of experimental nephritis by various methods, and the problems arising therefrom (the Pathological Department, Guy's Hospital). Dr. D. V. Cow: (1) Investigation of the diuretic action of certain tissue extracts, especially of an extract obtained from the intestinal mucous membrane; (2) investigations of certain bacterial diseases with the object of ascertaining any possible beneficent action thereon of organic compounds of a non-toxic nature (the Pharmacological Laboratory, Cambridge). Miss Elsie J. Dalzell: Investigation of gastro-enteric diseases in infants, with reference to etiology (bacteriological research), influence of diet (chemical and bacteriological research), vaccine therapy as a protective and curative measure (Lister Institute of Preventive Medicine). Dr. C. Funk: An investigation into the nature of the so-called deficiency diseases (beri-beri, scurvy, &c.), with special reference to the chemical nature and physiological properties of the substances concerned in their etiology and prevention (the Lister Institute of Preventive Medicine).

Prof. A. B. Macallum: Problems in metabolism in disease, especially those concerned with the formation of urea, ammonia compounds, and uric acid and their excretion (Prof. Fredrik von Müller's Laboratory, Munich). Dr. J. McIntosh: Certain problems concerning the immunity of syphilis (Bacteriological Laboratory, London Hospital Medical College). Dr. S. W. Patterson: (1) Questions concerned with diabetes, especially the fate of *lævulose* in the normal and diabetic organism; (2) later, to investigate the toxæmias of intestinal origin, especially the influence of different forms of diet on the production of poisonous products, amine derivatives of amino-acids, &c. (Institute of Physiology, University College, London). Miss Helen L. M. Pixell: The life-histories of parasitic protozoa (the Protozoology Laboratory, Bedford College, and the Lister Institute of Preventive Medicine). Dr. H. L. H. Schütze: Studies concerned with the modern absorption theory of the union between bacillary antigen and the antibodies of the blood serum (the Lister Institute of Preventive Medicine).

All correspondence relating to the fellowships should be addressed to the honorary secretary, Beit Memorial Fellowships for Medical Research, 35 Clarges Street, Piccadilly, W.

NO. 2251, VOL. 90]

ZOOLOGY AT THE BRITISH ASSOCIATION.

SECTION D, which was largely attended, presented a very full and varied programme, and the interest in the meetings of the section was well sustained throughout.

A lantern lecture, of a semi-popular nature, was given by Mr. F. Balfour Browne, on the life-history of a water-beetle. After describing his methods of keeping and rearing water-beetles, he proceeded to detail the life-history of a type of each of the two groups of water-beetles, taking *Dytiscus lapponicus* as a type of the group Hydradophaga, and *Hydrocharis caraboides* as a type of the group Palpicornia. The former, which has a very restricted distribution in the British Islands (N.W. Ireland and W. Scotland), being apparently a remnant of the fauna which in earlier and colder times occupied this area, seems to be the first species of the genus the life-history of which has been followed in detail. Mr. Balfour Browne gave an account of the egg-laying habits, the development of the larva and its escape from the egg by means of a pair of small spines on the head, the scraping of which against the shell ultimately ruptures it, and allows the larva to wriggle out. He stated that the larva, in addition to sucking the juices of its prey, from time to time reverses the action of its pharyngeal pump, so as to pour digestive juice into the prey (e.g. an insect larva), so that all the soft parts are dissolved and a thin pellicle of chitin only remains. He showed how the larva, after it is full grown and leaves the water, builds the pupal cell, and he referred to the winter habits of the perfect insect. He then compared the life-histories of *Hydrocharis* and *Dytiscus*, and pointed out how each type has adopted different means to attain the same end, and that it was just such differences which enabled each species to hold its own in its particular community in the great struggle for existence.

Foraminifera.

Messrs. Heron-Allen and Earland maintained that the life-history of *Saccamina*, as described by Rhumbler, was a composite sketch, and involved three separate organisms: (1) the early phases were stages of *Crithionina mamilla*, a sessile rhizopod, which, although often associated with *S. sphaerica*, has a wide distribution apart from that species; (2) the next phase was really *Psammosphaera fusca*, an extremely variable species, occurring both free and sessile, always without a general aperture, and found under conditions of depth, &c., in which *Saccamina* never exists; (3) the "Saccamina" stages, described by Rhumbler, which represent the complete life-cycle of *S. sphaerica*. Early shell-bearing stages of this species differ from the adult only in their smaller size, somewhat less finished exterior, and in the form of the general aperture, which is at first a mere fissure. The nipple-like protuberance, on which the aperture of the adult is placed, gradually develops later.

The Isle of Wight Disease of Bees.

Dr. H. B. Fantham gave an account of the causal organism of this disease—a minute microsporidian parasite, *Nosema apis*—which was discovered by Dr. Annie Porter and himself. The organism is, in the main, a parasite of the alimentary tract of the bee. Spores of the parasite, swallowed by the bee, give rise each to an amœbula, which enters an epithelial cell of the gut, becomes rounded, grows and feeds for a time, and then begins to multiply by various types of binary fission, producing clusters or chains, each individual of which is ultimately uninucleate. The presence of these parasites causes derangement of the bee's digestive processes, and may be fatal.