

ing the value and utility of Hertwig's great "hand-book."

Hertwig, a laboratory worker rather than a field naturalist, had no belief in "das schon morsch gewordene Lehrgebäude des Darwinismus," and to this fact we owe the last of his larger text-books—the useful and interesting, if not wholly convincing, "Das Werden der Organismen," first published in 1916 and now in its third edition.

Oscar Hertwig's really great, indeed epoch-making, contributions to the development of biological science are to be found, however, not in his text-books, but in a comparatively small group of original investigations, some of them carried out in co-operation with his brother Richard, which are of the most fundamental importance. It was in 1875 that Hertwig, forestalling van Beneden by a few months, showed for the first time, by his studies upon sea-urchin eggs, what was the real nature of the fertilisation of the animal egg—that the process consisted essentially of the fusion between the nucleus of the egg and the nucleus of one single spermatozoon. In 1878 there appeared the monograph by the brothers Hertwig upon the sense organs and nervous system of the medusæ—a work published before its time and perhaps destined to fill its rôle more completely in the future with a fuller recognition of the fact that the most fundamental function of the nervous system is to preserve intact the organic continuity in the animal body throughout its evolutionary increase in bulk.

In the early eighties of last century, Oscar and Richard Hertwig, stimulated by the work of English morphologists—Huxley, Lankester, and Balfour—turned themselves to the investigation of the foundations of the germ-layer theory, clearing up the muddle which had resulted from the non-recognition of what we now know by Hertwig's name, mesenchyme, and corroborating and amplifying Lankester's conception of the enterocœlic nature of the cœlom.

In 1890 Oscar Hertwig published his comparison of "Egg- and Sperm-formation in *Ascaris*," in which he worked out in minute detail the parallelism in gametogenesis in the two sexes, and cleared up the mystery of the "polar bodies," long known as characteristic of the unfertilised animal egg. Hertwig showed that male and female gametes are alike formed in sets of four, but that in the female sex three of each four degenerate, the three degenerate eggs being the polar bodies.

The last of Hertwig's works that demands mention is his study of those extraordinary malformations of vertebrate embryos to which he applied the name "spina bifida." In these the body of the embryo is divided into two halves by a longitudinal cleft traversing the notochord and the greater part of the central nervous system, and yet this seemingly irreparable injury proves no insuperable barrier to continued development. In many cases the cleft closes, the two halves unite and a perfectly normal individual results. Hertwig correlated these monstrosities with a hypothetical evolutionary stage in which the neural surface of the ancestral vertebrate was traversed by a slit-like primitive mouth, and to-day this is still the only working hypothesis at our disposal to explain a very extraordinary phenomenon.

It must not be imagined that Hertwig's activities were limited to such fields as are indicated by the various works to which allusion has been made. He interested himself in the social questions of the day, and the very last of his publications that has come into the writer's hands is "Der Staat als Organismus" (1922), with a trenchant criticism of some of those forms of extremism that are so rife at the present time.

#### MR. A. TREVOR-BATTYE.

MR. A. TREVOR-BATTYE, who died at Las Palmas on December 20, was an accomplished naturalist and Arctic traveller. The second son of the Rev. W. Wilberforce Battye, he was born in 1855 and adopted in 1890 the additional surname of Trevor on succeeding to certain estates that had fallen to his father. After leaving Oxford, Mr. Trevor-Battye indulged his taste for natural history in extensive travels in North America, Africa, the Himalayas, and Arctic Europe. In 1894, in the yacht *Saxon*, he visited the little known island of Kolguev, in the Barents Sea, with the object of devoting the summer to the study of its bird life. The *Saxon*, on returning from a cruise to Novaya Zemlya, missed Mr. Trevor-Battye through inability to reach the east coast, and returned to England without him or his companion, Mr. Hyland. The two Englishmen joined a party of wandering Samoyedes and made good their retreat to the mainland by sledge and boat. This was a fruitful expedition and completed the exploration of Kolguev.

In 1896 Mr. Trevor-Battye returned to the Arctic regions, accompanying Sir Martin Conway as naturalist on his expedition to Spitsbergen. Mr. Trevor-Battye made explorations around Dickson Bay and, with Prof. Garwood, climbed Hornsunds Tind. A few years later he visited Crete and made valuable contributions to the knowledge of its natural history.

Mr. Trevor-Battye was editor of natural history in the "Victoria History of the Counties of England," and of Lord Lilford's book on British birds. His own works included "Icebound on Kolguev" (1895); "A Northern Highway of the Tsar" (1897); and "Camping in Crete" (1913). "Crete: its scenery and natural features" was a recent contribution to the *Geographical Journal* (September 1919).

#### DR. FRIDOLIN KRASSER.

A FEW weeks ago Dr. Fridolin Krasser was found dead in his laboratory at the Deutsche Technische Hochschule at Prague, where for several years he had occupied the chair of botany. He was widely known as a palæobotanist who had devoted himself to the investigation of Mesozoic floras, more especially to the study of the large collections of Upper Triassic plants from the well-known Lunz beds in the Hof Museum of Vienna. In 1887, Dr. Krasser published a note on heterophylly inspired by the work of Baron Ettingshausen, with whom he was closely associated. In 1891 he wrote on the Rhætic floras of Persia; a few years later he turned his attention to the Cretaceous plants of Moravia, and in 1900 and 1905 made some interesting contributions to our knowledge of Palæozoic and Mesozoic floras of the Far East.

Dr. Krasser published several papers on Upper Triassic floras, and it was hoped that he would eventually produce an adequately illustrated account of this important but still very imperfectly known period of botanical history. It would be a fitting recognition of the value of Dr. Krasser's work if the authorities of the Vienna Museum could see their way to entrust the material to which he was devoting his vacations to some palæo-botanical colleague with a view to the publication of a comprehensive memoir. Among other contributions reference may be made to papers on the genus *Williamsonia* and other Jurassic plants from Sardinia.

Dr. Krasser was a man of attractive personality, a good friend, and an enthusiastic investigator.

PROF. RHYS DAVIDS.

By the death on December 27, in the fulness of years and honour, of Prof. T. W. Rhys Davids, England has lost a great oriental scholar. Son of a Congregational pastor at Colchester, and born on May 12, 1843, Prof. Davids was educated at Brighton School, and studied Greek and Sanskrit at Breslau University. He spent eight years in the Ceylon Civil Service, where he

mastered Pali and commenced his Buddhistic studies. Returning home he became, from 1882 to 1912, professor of Pali and Buddhist literature at University College, London, and from 1904 to 1915 professor of comparative religion at the University of Manchester. He was secretary and librarian of the Royal Asiatic Society from 1885 to 1904, and he shared in the foundation of the British Academy, of which he was a fellow.

Prof. and Mrs. Rhys Davids—the latter also an accomplished Pali scholar—were the leading agents in spreading a knowledge of Buddhism in this country. An inspiring teacher and an indefatigable worker, he produced a number of books on the subject which he had made his own; the best known of which are his manual of "Buddhism," "Buddhist India," and "American Lectures on Buddhism." He also did good work in establishing the Oriental Translations Fund and the Indian Text Series. His death leaves a gap in the scanty ranks of oriental scholars which will not be easily filled.

WE regret to announce the death on December 30, in his sixty-sixth year, of Dr. J. B. Haycraft, emeritus professor of physiology in the University of Wales.

### Current Topics and Events.

SCIENTIFIC workers are too well acquainted with the value placed on their services to be surprised at an advertisement for a university assistant lecturer in a department of science at a salary of 300*l.* a year. Recently, however, such an offer provoked an indignant protest from a disinterested member of the general public, who stated to us that the remuneration of his chauffeur was on a more liberal scale. While it is true that any educated man with aspirations would prefer a university teaching post, with its vague promise of an interesting and useful career, to the more mundane occupation, it is nevertheless a matter of the gravest concern that those educational institutions which are engaged in the task of increasing and disseminating knowledge are in such a parlous financial position that they are forced to offer salaries bearing no relation to the status of the posts, and imposing on their holders an unfair burden of financial sacrifice. The greatest benefactors of the universities are still the members of the teaching staffs themselves.

THE story of Shackleton's last Antarctic expedition on the *Quest*, as presented at the New Scala Theatre, is a little disappointing, inasmuch as considerable interesting material is not explained. It is a difficult task for Commander Frank Wild to supply anything more than a running commentary with so much film shown. The curtailment of some of the "Departure" film and "Ports of Call" film, such as a bull fight in Portugal, all of which occupy considerable time, would, perhaps, be advantageous, and the audience taken as quickly as possible to the lonely sub-Antarctic islands with their fascinating bird life—to South Georgia and its whaling industry, and to the southern ice fields. A few still pictures introduced here and there would afford the lecturer

an opportunity of giving more information, which is badly needed, of the natural history pictures. The natural history films are extraordinarily interesting, and commence with a landing through the heavy surf on St. Paul's Rocks on the equator. In the midst of these small dangerous rocks there is a lagoon of wonderfully clear water, with many species of fish to be seen in its pellucid depths. The rocks provide a nesting place for hundreds of sea birds. Excellent films are shown of the rookeries of the great wanderer Albatross, the Cape hen, the giant petrel, the Gentoo penguin, and the sea elephant, all taken at South Georgia. Ascension Island provides a moving picture of a great rookery of terns. The lengthy film of the whaling industry in South Georgia is shown with the film running at high speed, commencing with the harpooning of the rorqual, or blue whale, and showing the whole process of "trying out." This film is full of interest and instruction, but, unhappily, bears eloquent testimony to the extermination of southern whales. Soon these rorquals and fin-back whales will become as scarce as the sperm and southern whalebone whale, if the industry is allowed to continue uncontrolled. Zavodovski Island, to the south of South Georgia, was next visited. This ice-covered, rock-bound, and forbidding island is the home of countless penguins. Round its coast are numbers of deep caves which belch forth dense sulphurous fumes. The three months spent in the ice pack with constant vigilance and toil in battling the floes, are not of special interest from a lecture point of view, though no doubt useful scientific data was collected.

THE duration record in gliding established at the recent contests on the South Downs has already been broken in a rather sensational manner, and by another