

observations, it would be a matter for congratulation. When a meteor is observed by two or more practised observers, the results usually work out very well; but in the case of large fireballs witnessed by a great number of persons, the descriptions are often very conflicting and dubious, and the discussion of such materials is seldom either profitable or trustworthy. W. F. DENNING.

RUDOLF LEUCKART.

RUDOLF LEUCKART, whose death removes one of the most eminent figures in the zoological world, was the son of a bookseller, and was born on October 7, 1822, at Helstedt, which until 1809 had been the seat of one of the universities of the state of Brunswick. A taste for the study of natural history was probably hereditary in the family, for his uncle, Friedrich Sigismund Leuckart (1794-1843), was a zoologist of no mean reputation. The subject of our sketch began his career as an author at a comparatively early age, for whilst still a student at the University of Göttingen he completed the "Lehrbuch der Zootomie" of his teacher, Rudolf Wagner. After serving for a time as assistant in the Physiological Institute of his *alma mater*, he received in 1850 the appointment of extraordinary professor at Giessen, which the genius of Liebig had then raised to a position of great importance among the universities of Germany.

He had already shown what manner of man he was by the publication of two treatises, "Beiträge zur Kenntniss wirbelloser Thiere" (in conjunction with Heinrich Frey, 1847) and "Ueber die Morphologie und Verwandtschaftsverhältnisse der wirbelloser Thiere" (1848), in which the great division *Radiata* of Cuvier was broken up into *Calenterata* and *Echinodermata*. He further recognised Metazoa as divisible into six types—*Calenterata*, *Echinodermata*, *Vermes*, *Arthropoda*, *Mollusca* and *Vertebrata*—and thus initiated a system which, in its main features, is still maintained at the present day, and must be recognised as a stroke of genius in a young man of some twenty-five summers, working at such an early stage in the history of morphological science.

In 1855 he was made ordinary professor, and in 1870 removed to Leipzig. As a teacher he was clear and stimulating, and his remarkable success in this department of scientific work is attested by the volume issued in commemoration of his seventieth birthday, in which about 139 men of science, including many of the most eminent zoologists of the day, are proud to acknowledge themselves his pupils.

As an investigator he fully realised the promise of his early youth. His knowledge was as accurate as it was extensive, and that to a degree which only becomes comprehensible when we remember that unaided he contributed for nearly forty years a masterly summary of current researches into the natural history of the lower animals to the pages of the *Archiv für Naturgeschichte*. It is clearly impossible to give anything like a detailed account of such an active and many-sided career in a moderate space: let it suffice to recall his insistence on the division of labour in the animal kingdom, his researches on the reproduction of bees and of the Cephalopoda, his recognition of the ciliated organ of Heteropoda and Pteropoda as an osphradium, and his reference of *Neomenia* to the Mollusca.

Undoubtedly, however, his greatest energy was devoted to the study of parasitic life in general and to the life-history of the parasitic worms in particular. He at once recognised the importance of the methods of experimental helminthology introduced by Küchenmeister, and demonstrated the life-history of nearly all the bladder-worms then known by rearing them in suitable hosts. He was the author of epoch-making researches

on *Trichina* and on the *Pentastomida*, and contemporaneously with the Englishman, A. P. Thomas, worked out the life-history of the Liverfluke. His work on the "Parasites of Man," the first volume of which has been translated into English, is a perfect cyclopædia of information derived from the writings of others and from his own observations. He has passed away full of years and full of honours, leaving a name which will ever be venerated by zoologists of every tongue and nation.

NOTES.

THE first soirée of the Royal Society, to which gentlemen only are invited, is fixed for Wednesday, May 11.

ON Saturday last (April 2) the Council of University College, London, elected Prof. H. L. Callendar, F.R.S., to the Quain Professorship of Physics, about to become vacant by the resignation of Prof. G. Carey Foster, who in a few months will have held his Professorship in University College for thirty-three years. Prof. Callendar, who has been Professor of Physics in McGill College, Montreal, will enter upon his duties in London in October next.

SIR WILLIAM TURNER, F.R.S., professor of anatomy in the University of Edinburgh, has been elected a corresponding member of the Berlin Academy of Sciences. He has also been elected president of the General Medical Council, in succession to the late Sir Richard Quain.

PROF. H. C. BUMPUS has been appointed director of the laboratory of the United States Fish Commission Station at Wood's Holl.

SIR SAMUEL WILKS has been re-elected president of the Royal College of Physicians of London.

M. RICHET has been elected a member of the Paris Academy of Medicine.

A "JARDIN DE KEW" is to be established in the neighbourhood of Nantes by a rich citizen of that town. The new botanical garden will be planned on the same lines as the Royal Gardens at Kew, and special attention will be given to the cultivation of plants useful in French colonies. It is hoped that the garden will eventually do for French colonial possessions what Kew does for British colonies.

THE Paris correspondent of the *British Medical Journal* announces that a recent decree authorises the University of Paris to borrow 68,000*l.* for the purpose of building laboratories where physical science, chemistry, and natural history will be taught for the benefit of students who are preparing for the examination for Science Certificate. Part of the money is to be applied to the completion of the Laboratory of Vegetable Biology belonging to the University of Paris at Fontainebleau.

THE policy exemplified by the following appointment, announced in *Science*, might be adopted with advantage in this country:—Dr. Charles Wardell Stiles, of the United States Department of Agriculture, has been appointed *attaché* to the United States Embassy in Berlin. Dr. Stiles's duty will be to keep the Agricultural Department informed on important discoveries and other matters of interest to agricultural science, to defend American meats, fruits and other exports against unjust discrimination, and to advise the Secretary of Agriculture from time to time concerning the purity of the food products that are shipped from Germany to the United States. It is said that the appointment of Dr. Stiles will probably be followed by other similar appointments, and it consequently represents an important advance in the application of scientific principles to diplomatic and commercial affairs.