

a single group, once for all? Much space might also have been gained for questions by giving what corresponds to a title-page only on the first card. Thoroughly systematic names, based on a *single* principle now in use, ought alone to be employed in elementary teaching. "Argentive chloride," "silver chloride," "corrosive sublimate," are names of three quite distinct kinds which, we have found, the author employs without comment. A nomenclature card would indeed be a valuable prefix to the series. It would also be an advantage to append answers to all the questions.

Clearly expressed rules, and good examples of the mode of applying them, are so obviously useful to students, that it only remains to add that Mr. Woodward has done his work well.

E. J. M.

**Agricultural Engineering.**—*Der Cultur-Ingenieur*. Herausgegeben von Dr. F. W. Dünkelberg. (Brunswick, 1869.)

THIS periodical, a quarterly journal in its second year of publication, professes to deal with all questions of applied science affecting agriculture. The papers contained in the present number are mostly of a thoroughly practical character. They treat of such matters as the testing of steam-engines at agricultural exhibitions, the examination and adjustment of levelling instruments, the cause of boiler explosions, the mean velocity of water in canals and rivers, and the usefulness and profitableness of various machines for agricultural purposes. One paper gives a description of English locomotives for use on ordinary roads. The journal is well got up and amply illustrated.

**The Microscope and its Use.** By Dr. H. Hager. (*Das Mikroskop und seine Anwendung*. (Berlin: Springer.)

THIS little work gives, in less than a hundred pages, first, a brief account of the microscope and of microscopic appliances; secondly, a still more rapid description of common microscopic objects. It is, in fact, very much like our own "Carpenter on the Microscope," on a very reduced scale. The first part is written with great sense, and very much to the purpose. We are not surprised that the little work has received in Germany the unusual honour of a third edition.

**Freshwater Radiolaria.**—*On some Freshwater Rhizopoda, new or little known*. By William Archer. (*Quarterly Journal of Microscopical Science*, July and October, 1869.)

MR. ARCHER, of Dublin, who is well known as one of the contributors to Pritchard's "Infusoria," and a careful observer, has for the last two or three years chronicled in the Proceedings of the Dublin Microscopical Club, published in the *Quarterly Journal of Microscopical Science*, the occurrence of Radiolarian-like Rhizopods in the moor-pools of Ireland. At the end of last year Dr. Focke, of Bremen, described and figured a few of the same forms, bearing a likeness to some which have been considered as belonging to the genus *Actinophrys*, or sun-animalcules, of Ehrenberg. Mr. Archer has at length published the description of his new species, with full illustrations in three folding coloured plates. Many of these new freshwater Radiolarians, like the marine forms which they appear to represent in fresh water, carry siliceous spicules; they are mostly globular, and have a capsule surrounded by protoplasmic matter, which is drawn out into very long and delicate threads or rays, whilst the spicules are aggregated so as to form a loose sort of skeleton. In one large species Mr. Archer found several globular capsules united in one individual (*Raphidiophrys*). The contents of the capsules are coloured green in some instances, in other species they are red, or colourless. These most interesting animals are found only in moor-pools, and are, therefore, not to be got at by every observer. It is, therefore, very curious that besides Mr. Archer's and Dr. Focke's publications in this year, Dr. Richard Greef, of Bonn, should also have turned his attention to them, without

being aware of Mr. Archer's work. In No. 3 of Max Schultze's *Archiv* for this year, Dr. Greef has a paper and plates, describing some species and genera *identical* with those of Mr. Archer, who, however, has precedence by some months. The fresh-water Radiolaria, it has been suggested, stand in the same relation to the more exuberant and highly developed marine Radiolaria, as do the fresh-water Hydrozoa represented by Hydra to the much more numerous, more brilliant, and varied marine Hydrozoa.

E. R. L.

**The Annals and Magazine of Natural History.**—No. 24. December, 1869. (Taylor and Francis.)

THE last number of this journal contains several valuable papers, of which the most important is undoubtedly Mr. Carter's description of the Development of *Sorastrium spinulosum*, which will be read with interest by botanists. Dr. Leconte, of Philadelphia, contributes a list of beetles collected in Vancouver's Island by Messrs. H. and J. Matthews, with descriptions of a considerable number of new species. Dr. Leconte does not cite any of the species from the same locality described by Mr. Francis Walker in Lord's "Naturalist in Vancouver's Island and British Columbia;" in all probability he will find that some of his supposed new species are already described.—Mr. T. Vernon Wollaston publishes a continuation of his paper on the Coleoptera of St. Helena, the general results of which we propose to give on its completion.—A third entomological paper is by Mr. Fred. Smith, on the Parasitism of *Rhipiphorus paradoxus*, in answer to a communication in the November number by Mr. Andrew Murray, in which that gentleman maintained that the larva of *Rhipiphorus*, which is always found in the cells of wasps, is a parasite rather in the classical than in the natural history sense of the term; that is to say, that it merely lives upon the food furnished to the wasp-larva, and does not feed upon the substance of the latter. In opposition to this view, Mr. Smith cites observations made by himself and by the late Mr. F. Stone, which show clearly enough that the larva of *Rhipiphorus* is not hatched until the wasp-larva is approaching maturity, that it speedily fastens upon its companions, and appropriates the latter's materials with so much avidity as to attain its full growth in about forty-eight hours.—Other purely zoological papers are—A description of a new British spider belonging to the genus *Epeira*, by Mr. John Blackwall; descriptions of two new species of sun birds from the Island of Hainan, by Mr. Robert Swinhoe; and a notice of some nondescript bones in the skull of osseous fishes, by Mr. George Gulliver. The bones referred to in the last-mentioned paper are to be found in the head of the codfish at the hind part of each post-frontal bone. There is one on each side of the head, and their form is that of a sub-conical cup. The author calls them *expost-frontal ossicles*. Similar limpet-shaped ossicles hitherto unnoticed occur in other parts of the head.—In a joint paper on the Nomenclature of the Foraminifera (the thirtieth of a long-continued series), Messrs. Jones, Parker, and Kirkby describe the extraordinarily varied forms under which a species, to which they attribute the name of *Trochammina pusilla*, presents itself. These forms, which have of course received a great number of different names, are represented by the authors on a plate; they occur fossil in almost all formations from the Permian to the Tertiaries, and some of them are living in our present seas.—In a short contribution to Jurassic Palæontology, Mr. Ralph Tate indicates the necessity for breaking up the great genus *Cerithium*, and notices that the genus *Kilvertia*, established in 1863 by Lycett, at the expense of *Cerithium*, is identical with *Exelissa*, Piette (1861), of which he describes a new British Liassic species. He also proposes the formation of a new genus, *Cryptaulax*, for another group of *Cerithia*, in which the aperture more resembles that of *Chemnitzia*, and the posterior canal is concealed by the outer lip.