

quire one already versed in the literature to extract the truth from the footnote revision. Even, however, if the student succeeds in this, he will soon be confused by the plain unrevised statement on p. 106 that the course of cleavage is different in lamellibranchs and gastropods, whereas the recent work has demonstrated a fundamental similarity. It is also to be regretted that the editor should, apparently, have felt unable to replace some of the older figures with more accurate recent ones; not a single figure from the newer works is introduced.

A feature of the revision that will be heartily welcomed is the appendices to the lists of literature, in which the works published since 1893 are included. An important omission from the usually full and accurate lists is that of Heath's valuable paper on *Ischnochiton*, the more noticeable from the scantiness of the literature of the embryology of the *Amphineura*.

Misprints are not common, but it is rather a serious one that credits Hatschek's figures of the cleavage of *Amphioxus* given on p. 537, to Salensky. The present writer finds his initials once F. K. and again F. H., which arouses the suspicion that others also may have ground for complaint.

Take it all in all, the book is a good translation of the standard work on the subject, and the revision will at least suffice to guide the serious student to the more recent literature.

F. R. L.

The Play of Man. By KARL GROOS. Translated by ELIZABETH L. BALDWIN, with a preface by J. MARK BALDWIN. New York, Appleton & Co. 1901. Pp. 412. Price, \$1.50.

This is not a drama, as the ambiguous title might signify, but a scientific treatise on sport and pastime, the performance of life's activities not for serious purposes, but for the solitary or cooperative pleasure in them. The author includes in his term the playful activity of the sensory apparatus in feeling, temperature, taste, smell, hearing and sight; the playful use of the motor apparatus, and the playful use of the higher mental powers. His second order of play is *socionomic*, that is, it takes two or more

to fight, play chess, torment, haze, court, cooperate in diversion. The facts and results of over play and diseased play are not neglected.

Part III. is devoted to theoretical explanation of sport, the author finding its groundwork in the following:

1. The discharge of superabundant vigor—the physiological cause.

2. Activities of ancestors wrought in their children in the form of hereditary predispositions—the biological cause.

3. Pleasurableness and freedom from purpose—the psychological cause.

4. The enjoyment of imitating what produces agreeable or intense feelings—the esthetic cause.

5. The strengthening of the social tie—the sociological cause.

The closing pages are devoted to the relation of play to pedagogics. We have only space to quote one sentence, "At school one should learn to work, and he who does everything playfully will always remain a child." The reader will find throughout the work a becoming modesty in view of a new science, and a goodly portion of playfulness to relieve the monotony of dull classification.

O. T. M.

Text-book of Inorganic Chemistry. By VICTOR VON RICHTER. Edited by PROFESSOR H. KLINGER, University of Königsberg. Authorized translation by EDGAR F. SMITH, Professor of Chemistry in the University of Pennsylvania, assisted by WALTER T. TAGGART, Instructor in Chemistry. Fifth American from the tenth German edition. Carefully revised and corrected. With sixty-eight engravings on wood and colored lithographic plate of spectra. Philadelphia, P. Blakiston's Sons & Co. 1900. Pp. 430. \$1.75.

The continued popularity of this book is shown by the frequent editions; in this edition, notices on liquid air, the new gases in the atmosphere, and ten pages of physical chemistry introduced into the chapter on metals, indicate careful revision, and a desire to bring the book up to date, without changing its general character. The characteristic of von Richter's book is the great amount of condensed

information which it contains compared with other books of its size; indeed, it might be criticized as giving too much for a text-book for beginners, too little for advanced students; yet as this has always been the characteristic of the book through the different editions, the popularity of the work may be held to answer such criticism.

E. RENOUF.

BOOKS RECEIVED.

- Water Filtration Works.* JAMES H. FUERTES. New York, John Wiley & Sons. 1901. Pp. xviii + 283.
- Leçons sur les séries divergentes.* ÉMILE BOREL. Paris, Gauthier-Villars. 1901. Pp. 183. 4 fr. 50 cts.
- Essai sur les fondements de la géométrie.* A. W. RUSSELL. Translated into French by ALBERT CADENAT. Paris, Gauthier-Villars. 1901. Pp. x + 274. 9 fr.
- Moteurs synchrones à courants alternatifs.* A. BLONDEL. Paris, Gauthier-Villars. 1901. Pp. 241. 3 fr.
- The Sea-beach at Ebb-tide.* A. F. ARNOLD. New York, The Century Co. 1901. Pp. x + 490. \$2.40.

SCIENTIFIC JOURNALS AND ARTICLES.

The Journal of Comparative Neurology for April opens with two articles from the Neurological Laboratory of the University of Chicago, by Shinkishi Hatai. The first on 'The Finer Structure of the Spinal Ganglion Cells in the White Rat,' describes and figures two varieties of spinal ganglion cells and considers the smaller variety, the chromophilic cells of Nissl, to be an immature stage in the development of the larger variety. In the second paper, 'On the Presence of the Centrosome in Certain Nerve Cells of the White Rat,' the centrosome is described in nerve cells of new-born rats from the following localities: great pyramids of the cerebral cortex, Purkinje's cells, nucleus dentatus, ventral horn of spinal cord and spinal ganglion cells. The centrosomes were less easily demonstrated in the adult and were not found at all in some of these localities. Earl E. Ramsey, of Indiana University, describes 'The Optic Lobes and Optic Tracts of *Amblyopsis spelæus* DeKay,' a blind fish from the limestone caves of the Ohio Valley in which the eye and optic nerve are almost wholly degenerate. The optic lobes of the brain are greatly shrunken, the optic tracts and all parts of the optic tectum directly related to them are

entirely wanting and the remaining layers are generally reduced in thickness. G. E. Coghill, of Brown University, discusses 'The Rami of the Fifth Nerve in Amphibia.' In the course of an examination of the nerve components of *Amblystoma*, he clears up the morphology and homologies of the maxillary and ophthalmic branches of this *Urodele* and of the frog. Dr. Strong (Columbia University) presents a 'Preliminary Report upon a Case of Unilateral Atrophy of the Cerebellum,' in which the left hemisphere of the cerebellum was almost completely wanting. Finally, 'A Bibliography of the Literature on the Organ and Sense of Smell' is given by Dr. H. Heath Bawden, of the University of Iowa. This list contains 885 titles, including anatomical, physiological and psychological subjects.

The Popular Science Monthly for May begins with an account of 'The Carnegie Museum,' by W. J. Holland. Frederick A. Cook describes 'The Aurora Australis,' as observed from the *Belgica*, with illustrations showing some of the many forms assumed by this interesting phenomenon, and we have the first instalment of a paper on the 'Progress and Tendency of Mechanical Engineering during the Nineteenth Century,' by Robert H. Thurston. An article on 'Primitive Color Vision,' by W. H. R. Rivers, gives a very good résumé of the evidence on which is based the deduction that color vision has been a comparatively recent acquirement of the human race, and the fifth portion of 'A Study of British Genius,' by Havelock Ellis, is devoted to childhood and youth. Under the title 'The Frog as Parent,' E. A. Andrews gives an interesting account of some of the curious breeding habits to be found among the frogs. In 'Recent Physiology,' G. N. Stewart tells of some of the lines of modern investigation and their results. The final paper, by David Starr Jordan, on 'The Blood of the Nation,' is a study of the decay of race through the survival of the unfit.

The Plant World for April contains the following articles: 'Hints on Herborizine,' by A. H. Curtise; 'Notes on the Flora about Nome City,' by J. B. Flett; 'The Native Oak Groves of Iowa,' by T. J. and M. F. L. Fitzpatrick, be-