

the degree of elaboration of the sense data. The same act may be accomplished by practical insight and by reasoned inference, but the grade of the processes be markedly different. The monkey that unscrews the hearth-brush from its handle doesn't discover the principle of the screw, but simply observes that certain actions lead to certain ends. This higher conceptual form of reason Mr. Morgan denies to animals; but, while "contending that intelligence is not reason, I [do not] wish in any way to disparage intelligence. Nine-tenths, at least, of the actions of average men are intelligent and not rational. Do we not all of us know hundreds of practical men who are in the highest degree intelligent, but in whom the rational analytic faculty is but little developed? Is it any injustice to the brutes to contend that their inferences are of the same order as those of these excellent practical folk?"

But intelligence is not the only factor in life, and indeed is always dependent upon some sensible, some emotional state; while its existence is evidenced only by some expression, some exercise of a motor activity. The origin and function of pleasure and pain, the relation between the emotions and their expression, the difficulty of appreciating how far and in what way animals are sensitive to pain (and many striking examples of apparent insensibility are given), the relative dignity and distribution of various typical emotions, to what extent the more intellectual and moral emotions may be present,—these are the points most fully considered. So, too, on the motor side are considered the various forms and grades of response to stimuli by which intelligence is manifested. What on the intellectual side is formulated as the distinction between intelligence and reason, on the motor side becomes instinct and rational habit. The far greater share which frequently repeated acts occupy in the lower animals, the earlier age at which in the lower animals these instincts emerge, the persistency with which they seek expression even under ridiculously inappropriate conditions, are some of the traits of importance in this regard. If there is one problem in comparative psychology upon which there are as many minds as there are men, it is that of instinct; and Mr. Morgan very naturally devotes some space in bringing out his own views and criticising those of others, more particularly in showing his agreement and points of dissension from Mr. Romanes. The final chapter of the volume deals with mental evolution as a whole, and with a philosophical expression of the relation of the subject to the object, of the act of intelligence to the objective source of sentience. Under the former head we have a clear and common-sense statement of the value and difficulties of appreciating the various and graded forms of mind, the continuous hierarchy of psychological stages. Under the latter Mr. Morgan states his monistic philosophy, his belief that there is one something showing two aspects, the physical and the psychological. The one deals with the physical forms of energy (kinesis); the forms exhibited by the other may then be called "metakinesis;" and, "according to the monistic hypothesis, kinesis and metakinesis are co-ordinate. The physiologist may explain all the activities of men and animals in terms of kinesis. The psychologist may explain all the thoughts and emotions of man in terms of metakinesis. They are studying the different phenomenal aspects of the same noumenal sequences."

When leaving the book, we do so with the conviction that it will take an important place in the literature of biology and psychology, by reason of the timeliness and good perspective of its chapters, by the clearness and many-sidedness of its expositions, by the suggestiveness and stimulus of its main position. Though containing much that is sure to require modification in the near future, and also considerable that is personal opinion rather than demonstrated truth, the volume may be cordially recommended as a most satisfactory way of approach to modern biological psychology.

In the *New England Magazine* for May, 1891, appear, among other matter, "The Notes of Some New England Birds," by Simeon Pease Cheney; "The Alaskan Fur Trade," by Charles Hallock; and "The Oldest House in Washington" (illustrated), by Milton T. Adkins.

AMONG THE PUBLISHERS.

THE eleventh part of Edwards's "Butterflies of North America," just issued, is in every way equal to its predecessors. For the first time in this third series, each of the three large quarto plates, with the accompanying text, is given up to a single and relatively little known species of butterfly; two of them to species of *Satyrinae*, a group which nowhere in the world has found so complete a treatment as in America, at the hands of our author. Excepting for the intermediate larval stages of *Satyrus meadii*, every single stage of the creature's life is represented, usually by more than a single figure, and all in that exquisite and finely exact style we have become accustomed to in this work, but which can never be too highly praised or too fully appreciated. Such illustrations lie at the very foundation of the exact knowledge of butterflies, and are the key to any proper understanding of their real relationships. The butterflies treated of are *Apatura flora*, *Satyrus meadii*, and *Chionobas chryxus*, all of them living from five hundred to a thousand or two miles from Mr. Edwards's home, where they were bred and studied. This shows at once the opportunities to be overtaken by any zealous student, and renders possible thorough acquaintance with our entire fauna. Mr. Edwards hints here and there at some of the difficulties of the work, to have overcome which, even partially, in the case of such distant and secluded insects as this *Satyrus* and this *Chionobas*, is a high merit indeed. *Apatura flora* is an inhabitant of our extreme southern border; *Satyrus meadii* lives at moderate altitudes in restricted localities in Colorado, New Mexico, Arizona, and Montana; and *Chionobas Chryxus* at higher elevations in the Rocky Mountains from Colorado to British America, and, if with Mr. Edwards we include *calais* in the species, also across the continent in the higher north. In all three species the caterpillars hibernate in early life; but the history of the species as given here presents nothing of unusual interest, and closely resembles that of their nearest allies. Eighty-one figures, most of them colored and many much magnified, are given on the three plates.

—Julius Bien & Co., New York City, announce that they will publish an "Atlas of the State of New York," provided sufficient encouragement is secured to warrant so costly an undertaking. Among the proposed features of the work are these: a general map of the State, exhibiting county and town boundaries, etc., railroads, canals, and all important cities and towns; temperature and rainfall maps; detailed maps of the counties, sixty in number, showing public roads, rivers, lakes, city and township boundaries, etc.; railroad lines and stations; street maps, on a large scale, of the principal cities; lines of original land patents; an alphabetical list of counties, townships, cities, and villages, with population from last census, and an enumeration of all post-offices.

—Professor F. M. Taylor of Michigan University will shortly publish in the "Proceedings of the American Academy of Political and Social Science" an article on "Natural Law," which deserves the attention of every one interested in political questions. The author joins issue with the current notions on that subject, and attempts to show how true the popular instinct is which prompts a man to defend his elementary rights, if need be, by force.

—There is announced to appear soon the first number of the *Pantobiblion*, a monthly international bibliographical review of the world's scientific literature. In the words of the prospectus, "The purpose of this new monthly is to help the literary men of any department concerned with the applied sciences generally, and particularly those devoted to any technical studies of any specialty, to be promptly, exactly, and completely informed of the correspondent branch of current scientific literature, and to keep pace with the times as regards the advancement of applied sciences, and especially of technics and engineering of every sort." The editor of the *Pantobiblion* is A. Kersha, civil engineer, Fontanka 64, St. Petersburg, Russia. American subscription orders may be addressed to Messrs. D. Appleton & Co., New York.

—The Johns Hopkins Press, Baltimore, announces for early publication "American Oyster-Culture with Special Reference to the Past and Future of the Oyster Interest of Maryland," a popular

summary of a scientific study, by William K. Brooks, Ph.D., professor of animal morphology in the Johns Hopkins University of Baltimore, and director of the Chesapeake Zoölogical Laboratory. The danger to our oyster interest, this great natural source of prosperity, is now generally admitted, and the methods of restoring and developing depleted beds which were advocated by Professor Brooks attract more and more attention. The author has been urged to prepare a new work on this subject, as his reports on the "Embryology of the Oyster" and on "The Oyster Industry of Maryland," which were published by the Johns Hopkins University in 1879 and 1884, are now out of print. In accordance with these requests, a complete revision of the former reports, with the addition of new matter, has been prepared. Dr. Brooks served as one of the Oyster Commission of the State of Maryland in the years 1883-84, and received from the Société d'Acclimatation of Paris, in 1880, its medal for his researches on the development of the oyster.

—Charles W. Dulles, M.D., retires this week from the editorship of the *Philadelphia Medical and Surgical Reporter*.

—From Thomas Whittaker, publisher, we have received "The Life Story of Our Earth" and "The Story of Early Man," by N. D'Anvers. These small volumes, of about one hundred and fifty pages each, belong to the Science Ladders Series,—a series of handy volumes intended to give young people some knowledge of the laws of nature and the progress of science. The books are written in language simple and easily understood, yet sufficiently accurate for the purpose in view; and the illustrations, though not as good as might be expected in books of the kind, are well chosen and plentiful.

—The March number of the new *Zealand Journal of Science*, which is the second number of the new issue, contains "The Forthcoming 'Flora' of New Zealand;" "Some Notes on the Occurrence of the Trap-door Spider at Lyttelton," by Robert M. Laing; "An Edible Fungus of New Zealand;" "New Caledonia Nickel Ores," by Thomas Moore; "On the Discovery of the Nickel-Iron Alloy Awaruite," by G. H. F. Ulrich; "On the History of the Kiwi," by T. J. Parker; "Botanical Notes," by D. Petrie; "Effects of Thunder on Milk;" "Escallonia macrantha and Bees;" "Fertilization of Native Flowers by Honey-bees;" "On the Preservation of Solution of Sulphuretted Hydrogen;" "The Anatomy of a New Zealand Earth-worm;" "Recent Papers on the Natural History of New Zealand;" "Occurrence of Glow-worms in a Deep Cave;" "Humble-bees;" "Australasian Association for the Advancement of Science;" "On the Preservation of the Native Fauna and Flora of New Zealand;" "The Bull-roarer of some Australian Tribes;" and "Linnean Society of New South Wales." The magazine is published by Matthews, Baxter, & Co., Dunedin, N. Z.

—Among the new books of Messrs. Kegan Paul, Trench, Trübner, & Co. are "The History of Canada," by William Kingsford, LL.D.; "Essays in Politics," wherein some of the political questions of the day are reviewed from a constitutional and historical standpoint, by C. B. Roylance Kent (the word "politics" is used by the author in the wide sense as including all those questions which affect the life of men as members of society; and he discusses some of the more important questions of modern politics from a constitutional and historical standpoint, and gives them their due place in the larger sphere or area of the political science to which they belong, grouping them under such general headings as "Questions of Sovereignty," "Federal Government," "Political Institutions of Switzerland," "Progress of the 'Masses,'" "Socialistic Legislation," "Science and Politics"); "Alone through Syria," by Ellen E. Miller; "Sketches from a Nile Steamer," by Mrs. Tirard; "Buried Cities and Bible Countries," by George St. Clair; "Pessimism: A History and a Criticism," by James Sully (second edition, with new preface); "Principles of Natural and Supernatural Morals," Vol. II. "Supernatural Morals," by the Rev. Henry Hughes; "Body, Parentage, and Character in History," notes on the Tudor period, by Furneaux Jordan; and "Simplified Grammar of the Telugu Language," by Henry Morris, with a map of India showing the Telugu country.

—In the May issue of the *Magazine of American History* we note, "A Great Public Character," in which the career of William H. Seward is traced. The second paper is "An Early West Pointer," by Hon. Charles Aldrich of Iowa. Then comes a treatise entitled "A Lost Chapter in American History," by Rev. Dr. George Patterson of Glasgow, in which the early attempts of the Portuguese to colonize the north-eastern coast of America are pointed out. "The First American Ship," a brief article by Professor G. Brown Goode of the Smithsonian Institute; "Some California Documents," from Charles Howard Shinn of San Francisco; and "General Varnum on a Constitution of Government, in 1787," from Gen. James M. Varnum of New York,—are valuable contributions.

—In the *Forum* for May are three scientific articles likely to interest our readers, in addition to many others, of course, which cannot be classed strictly as scientific. One of the three is on "The Transmission of Culture," by Professor Lester F. Ward; the second is on "Chemistry To-day, and its Problems," by Professor William Crookes; and the third is on "The Bertillon System of Identification," by Alphonse Bertillon. Professor Crookes does not approve of speaking of a new and an old chemistry, yet points out important advances.

—The May number of the *Educational Review* will have an interest to many because of its containing probably the last public expression of the late Dr. Howard Crosby,—a brief article on "Religion in the Common Schools;" and also an article on "My Pedagogic Autobiography," left unfinished by the late R. H. Quick, the author of "Educational Reformers." The other features of the number are articles on "The Limitations of State Universities," by Ex-President Horace Davis of the University of California, and on "The Teaching of History in the Elementary Schools," by Professor Salmon of Vassar; the last of Professor De Garmo's papers on Herbart; a letter from Friedrich Kirchner on educational matters in Prussia; the Bishop of Durham's recent address before the University Extension Society, on "Ideals;" and reviews by Professors Tracy Peck of Yale, A. B. Hart of Harvard, John Dewey of the University of Michigan, William North Rice of Wesleyan, Dr. J. H. Hyslop of Columbia, and Hon. D. H. Chamberlain.

—At the meeting of the Royal Geological Society, Feb. 20, the Bigsby medal was awarded to Dr. G. M. Dawson, F.G.S., of Ottawa. On handing the medal to Dr. Hicks, F.R.S., for transmission to the recipient, the president addressed him as follows: "In asking you to transmit the Bigsby medal to Dr. George M. Dawson, I request you to convey to him at the same time an assurance of how fully the council appreciates the value of his researches into the geological structure of Canada, and how cordially we hope that he may live long to prosecute the explorations which have shed so much lustre on the Geological Survey of his native country."

—The following is a complete list of the papers read at the April meeting of the National Academy of Sciences: "Further Studies on the Brain of *Limulus Polyphemus*," by A. S. Packard; "On Aerodromics," by S. P. Langley; "The Solar Corona, an Instance of the Newtonian Potential in the Case of Repulsion," by F. H. Bigelow; "Report on the Human Bones of the Hemenway Collection in the United States Army Medical Museum, prepared by Dr. Washington Matthews, U.S.A.," by J. S. Billings; "Application of Interference Methods to Spectroscopic Measurements," by A. A. Michelson; "The Corona from Photographs of the Eclipse of Jan. 1, 1889," by H. S. Pritchett; "Stellar Motion Problems," by Lewis Boss; "Effect of Pressure and Temperature on the Decomposition of Diazo-Compounds," and "Researches on the Double Halides," by Ira Remsen; "Allotropic Silver," and "Note on a Paper by M. G. Lippmann," by M. Carey Lea; "On the Yttrium Earths, and a Method of making Pure Yttrium," by H. A. Rowland; report of the Watson trustees, and presentation of the Watson Medal to Professor Arthur Auwers of Berlin; "On the Distribution of Colors in Certain North American Reptiles," by E. D. Cope; "The Taxonomy of the Apodal Fishes," by Theo. Gill; "Researches on the Embryology of Mollusks," by W. K. Brooks and E. G. Conklin.