

Since psychology has been taken out of the field of metaphysics, and has entered the domain of the natural sciences, it has developed marvellously. The accuracy and stability it has attained are proportionate to its development. Biology has brought about this change. The former position psychology occupied was not so much to determine the relation and connection between mind and organism as to determine the science of pure thought. But now psychologists have studied the brain, anatomists have dissected the cerebral lobes, chemists have analyzed the different substances of the nerves and brain, and its size, weight, shape, and specific gravity have been taken into account for the sole purpose of determining psychical phenomena; also the laws of development have been applied to the phenomena of the human mind. The study of animal instinct, the growth of children, the customs, habits, and beliefs of early tribes and races, the study of defectives, the study of the brain and the senses and the logical connections of ideas, have all received their share of attention. There is no psychical phenomenon and no act of human conduct which does not come within the province of psychology. The sciences of ethics, of theology, of law, of jurisprudence, of history, of medicine, of pedagogy, and of politics presume a knowledge of the workings of the human mind. For who, unless competent to analyze correctly and justly the feelings, desires, and motives that prompt action, would desire to determine the motives that underlie human conduct or pass upon the laws of right and wrong. How much more humane would a person be in his judgment upon the acts and conduct of another if he knew the causes of them. How many mistakes would be avoided in the training and education of the young, if parents and teachers were more conversant with the principles of psychology. How much more accurate could judges be in dispensing justice, if they were less dependent upon their personal experience, and knew more about the principles of psychology. What material aid could lawyers give in establishing the truth, if they were well versed in the study of psychology. How many grave blunders could be avoided, if statesmen and legislators understood more thoroughly the spirit of the times and the popular mind.

That the larger portion of professional men know little, if anything, about psychology cannot be denied, and if they do know something about the study, their knowledge is either founded on their personal experience and on common maxims, or it is derived from some book written from some particular standpoint. Most of such knowledge is incorrect and wrong, and it is one of the objects of psychology to correct these false notions.

In conclusion, I will quote John Stuart Mill, who has given an excellent statement of the reasons why psychology should be studied. He says: "Psychology, in truth, is simply the knowledge of the laws of human nature. If there is anything that deserves to be studied by man, it is his own nature and that of his fellow-men; and if it is worth studying at all, it is worth studying scientifically so as to reach the fundamental laws which underlie and govern all the rest. There are certain observed laws of our thoughts and our feelings, which rest upon experimental evidence, and, once seized, are a clue to the interpretation of much that we are conscious of in ourselves, and observe in one another. Such, for example, are the laws of association. Psychology, so far as it consists of such laws, is as positive and certain a science as chemistry, and fit to be taught as such."

FRANKLIN A. BECHER.

Milwaukee, Wis.

Ball-Lightning.

DURING a severe thunderstorm yesterday the phenomenon of ball-lightning was seen in this village. An inspection of the locality shows that the ball was located between a telephone wire and a conductor-pipe about three feet distant, and was doubtless of the nature of an electrical brush preceding the disruptive discharge. It was of a reddish color, and exploded with a report like a musket; but did no damage, nor was it attended by any smell perceptible to those who saw it, although they were distant not more than five feet.

M. A. VEEDER.

Lyons, N. Y., June 28.

BOOK-REVIEWS.

Animal Coloration. By FRANK E. BEDDARD. 8°. New York, Macmillan & Co.

IN the opinion of the writer the most concise and useful treatise upon the important subject of animal coloration has very recently appeared from the presses of Macmillan & Co. Its author, Mr. Frank E. Beddard, F.R.S., is especially favorably known in this country, among morphologists, through his numerous and admirable publications which have appeared in connection with his duties as prosector to the Zoological Society of London. That position, coupled with the fact that Mr. Beddard has made extensive collections of materials to illustrate his "Davis Lectures" on the subject of which his present volume treats, is ample evidence that he was peculiarly well fitted to deal with the subject. The work, a small octavo of some 300 pages, is gotten up with all that exquisite taste and style which has long ago made the house of the Macmillans so justly famous. Many excellent wood-cuts and several beautiful, colored lithographic plates illustrate its pages, they being especially devoted to giving striking examples of "protective coloration" among animals, as well as "protective mimicry," "sexual coloration," "warning coloration," "coloration as affected by environment," and numerous kindred topics. Completing the volume, we find a well-digested "General Index," and an "Index of Authors' Names." Among the latter we note those of many laborers in this country, and it is gratifying to see that America's work along such lines is upon the constant increase, and from year to year meets with enhanced favor. Our author, in his "Introductory," clearly defines the distinction between "Color" and "Coloration," the former being the actual tints which are found in animals, the latter simply referring to their arrangement or pattern. Of course, the terms become synonymous in uni-tinted animals. "The colours of animals are due either solely to the presence of definite pigments in the skin, or, in the case of transparent animals, to pigment in the tissues lying beneath the skin; or, they are partly caused by optical effects due to the scattering, diffraction, or unequal refraction of the light rays." Other matters more or less remotely bearing upon this part of the subject are briefly, though ably, dealt with, nothing of importance having been overlooked. Mr. Beddard has not remained satisfied with drawing upon any special class or group of animals for illustration, but has carried his investigations into all nature, touching in the most brilliant manner upon the significance of the colors and coloration of "deep sea forms," "cave animals," and indeed plant and animal growths from all parts of the globe. Nor has he omitted to discuss the theories of various other authorities than those advanced by himself; in short, the entire subject covered by this highly inviting field of research seems to be brought fully up to date, and in many instances the book even extends our knowledge. Biologists everywhere will thank Mr. Beddard for this contribution, and its modest price (\$3.50) will constitute no real barrier to its soon appearing upon the shelves of every working naturalist in the United States.

R. W. SHUFELDT.

Takoma, D.C.

AMONG THE PUBLISHERS.

A NEW work on astronomy, entitled in "Starry Realms," has recently come from the press of J. B. Lippincott Company. The object of the work is to give the general reader some sketches of specially interesting matters relating to the heavenly bodies. The opening chapters are devoted to the more important relations of the sun to the earth, in which the author illustrates the different functions which the sun performs. The moon's history, and the phenomena attendant upon the lunar world, the planets, the meteors, the stars, are also ably considered. The work is embellished with ten full-page illustrations, and others in the text.

—Beginning with the July number, the magazine hitherto known as *Babyhood* will bear the name of *The Mother's Nursery Guide*, which expresses its purpose more fully and clearly than did the old appellation. There is no other change discernable in the essential features of the magazine, which looks back upon a