general works. It amply merits translation into English and other languages.

HAVEN METCALF
U. S. DEPARTMENT OF AGRICULTURE

SCIENTIFIC JOURNALS AND ARTICLES

The American Naturalist for January contains the following articles: 'Note on the Habits of Fierasfer,' by Edwin Linton, describing the manner in which the fish enters tail first the body of a holothurian. 'Records of Pennsylvania Fishes,' by Henry Fowler, giving definite localities for many species. 'Specific Name of *Necturus maculosus*,' by F. C. Waite. Tetradactylus is unavailable as a specific name, not because it refers to a generic character, but because it was not applied as a scientific name; what Lacépède wrote was *Protéetétradactyle*. Under 'Volvox for Laboratory Use,' Bertram G. Smith tells how it may be kept and J. A. Cushman records seven species of 'Ostracoda from Southeastern Massachusetts.'

The Museum's Journal of Great Britain has for its leading articles 'How to Promote Interest in Museum Collections,' by H. Conwentz, and 'Children and the Cult of the Beautiful,' by Beatrice V. Vernon. The first applies particularly to what may be termed local museums, and we doubt if many of the suggestions would prove to be practicable in a large institution. Miss Vernon's article deals largely with art museums and Mr. Harlan I. Smith will find in it methods akin to his interrogative label.

The Zoological Society Bulletin for January is an unusually good number. We can only note among other articles those on 'The Goat Herd,' 'An Almost Extinct Bird' (the California Vulture), the 'African Vipers,' 'The Frigate Birds' and 'Collecting for the Aquarium.' It is announced that the last of the large buildings are expected to be completed by the end of 1908, and that the attendance for the year was 1,300,000. A green turtle received at the aquarium weighed 540 pounds; the length of the upper shell was 4 feet 6 inches. It may be seen from this how large a thousand-pound turtle would be. The attendance at the aquarium during 1906 was something over 2,000,000.

The Museum News, of the Brooklyn Institute for February announces the installation of a group of Atlantic walrus. The principal article in the Children's Museum section is on the muskrat and states that in the Hackensack marshes the muskrats seem to live in houses throughout the year, the summer houses being more loosely built than the winter home.

The Fortnightly Review for January contains an article by E. Ray Lankester describing in some detail the work carried on at the British Museum during the past eight years under his immediate supervision.

SOCIETIES AND ACADEMIES

THE ST. LOUIS CHEMICAL SOCIETY

AT the regular meeting of the society on January 14, Mr. A. H. Kelling presented a paper entitled 'Sewage Purification.' Pollution of water supplies, and the danger of infection resulting from the habits of the house fly, were dwelt on as showing the importance of the subject. The three methods by precipitation, by means of sewage farms, and by means of septic tanks and filtration were then treated in considerable detail. After the discussion, which followed the presentation of this paper, Dr. Andrews presented a paper, which favorably discussed the probable appearance of some official interpretations of certain regulations contained in the last issue of the U. S. Pharmacopœia, with reference to the Pure Food and Drugs Act.

C. J. BORGMEYER,
Corresponding Secretary.

DISCUSSION AND CORRESPONDENCE

GENETIC LOGIC

TO THE EDITOR OF SCIENCE: Dr. Tawney's criticism of my book on 'Genetic Logic,' in your issue of February 1, calls for a word or two of comment.

He is mistaken in supposing the 'dualism of control' as I develop it represents my own view of the nature of reality.

Being the 'knower's logic' that I am de-

veloping—a matter made so explicit that the phrase is coined to express it—it is strictly the *knower's point of view* from which such a dualism is depicted. I aim to trace the natural history of the naïve dualism of knowledge inside the consciousness that has it. My motive in saying this here is not so much to meet this criticism as the wish to explain an ambiguous phrase I have employed in the book. I speak of 'foreign control' as of something 'foreign to the process itself' (of knowledge). What I mean is *'seeming to the process itself to be foreign,'* not *'seeming to the writer to be foreign to or apart from the process.'* There is a real ambiguity in the phrase, and I am herewith calling attention to it. Others may be misled by it.

Dr. Tawney also says that many of the 'objects' I distinguish are not such from the knower's point of view; implying that by using that phrase I limit the 'knower's logic' to process having a self-conscious knower, that is, to consciousness of *the self-knowing or reflective type.* On the contrary, I use 'knower' for any process that has knowledge, as is customary; the dog, the worm, the mollusc is a 'knower' so far as it knows anything; indeed, I have gone to excessive pains to say that I treat of cognitive meanings from the point of view of *the process that has them —the psychic point of view.* How and with what *psychic meaning* there arise objects of knowledge in a progressive series, it is the main problem of my book to discuss. It begs the whole question to assume that there is no knowledge except that which *knows the self.* With the conclusions one may differ, but the doctrine should be clearly expounded.

Finally, a word in ethics. It is a writer's duty sometimes to help the critic understand his views; for a real embarrassment may arise to one who fears to criticize, lest the criticism, though possibly due to misinterpretation, may yet seem to misrepresent and so to have upon it the taint of intellectual dishonesty. I myself have sometimes felt in studying a book that if I knew the writer's own real mind to be or not to be what I take it to be, I should feel more free in criticizing him; for, of course, if a critic does know better, misrepresentation is dishonest. So though in itself a point be hardly important enough to require attention, yet the author may have the duty of aiding those who take interest in his work.

J. MARK BALDWIN
JOHNS HOPKINS UNIVERSITY,
February 3, 1907

SPECIAL ARTICLES

SYMMETRY IN BIG CLAWS OF THE LOBSTER

THE lobster is probably the most widely known of living crustacea, as it is one of the largest, and most eagerly sought for food. Few who have seen it have failed to notice that the great 'forceps' or big claws are unlike, the larger, which weighs from one quarter to one half as much as the entire animal, having crushing tubercles, while the smaller and slenderer is armed with tooth-like spines. The toothed, or 'quick,' claw, which is a 'lock-forceps' with serrate jaws, is used for seizing and holding, and the larger crushing, or 'club,' claw for rending and crushing the prey.

The large claws occur about as frequently upon the right as upon the left side of the body, and without distinction of sex, but as I have shown to be the case with the shrimp *Alpheus,* in which the asymmetry and inequality of the great chelæ are even more marked, this condition is probably one of direct inheritance, all members of a brood being either right-handed or left-handed. That is to say, the normal position of the toothed or crushing claw is not haphazard, but is predetermined in the egg.

In 1895 I described a variation in the American lobster[1] (*Homarus americanus*) in which both the big chelæ were similar, and of the toothed type. This variation was exceedingly rare, only three cases having been found in a collection of 2,430 lobsters made by Mr. Vinal N. Edwards, the naturalist and collector of the U. S. Fisheries' laboratory at Woods Hole, Massachusetts.

Since that time several papers have appeared upon this subject, notably by Stahr,[2]

[1] 'The American Lobster,' Bull. U. S. Fish Comm., 1895, p. 143.

[2] *Jenaischen Zeitschrift f. Naturwiss.,* 33 Bd., 1898.