

organism, and that the individual is a part of a larger whole. Rudolph von Ihering develops this idea in the second volume of his 'Zweck im Recht.' The source of ethics he finds in society; the end of ethics likewise is discovered in society; and from society, according to this theory, is derived the ethical motive-power which resides in the human will.¹ Social ethics thus replaces individual ethics. Ethics becomes one of the social sciences, and indeed, to use Ihering's expression, the 'queen' of them all. With this view of Ihering, should be compared the teachings of Lotze; and I will close this paper with a quotation of some length from his 'Practical philosophy': "To antiquity, man appeared without any manifest attachment to a coherent system, transcending his earthly life, pre-eminently as a creature of nature, whose aim—not so much moral as altogether natural—could only consist in bringing all the bodily and spiritual capacities with which he is endowed by nature, to the most intensive, and at the same time harmonious, cultivation. . . . This whole culture is not a preparation of the powers for a work to be accomplished; but it is a self-aim to such an extent that the self-enjoyment of one's own fair personality, and its secure tenure against all attacks from without, form the sole content of such a life. . . . Just the opposite of this, under the influence of Christianity, the conviction is formed, that, strictly speaking, every man is called only to the service of others; that the effort to concentrate all possible excellences in one's own person is, at bottom, only a 'shining vice;' but true morality consists in the complete surrender of one's own self, and in self-sacrifice for others. . . . Nothing, therefore, remains for us to do but to supplement the ancient self-satisfaction, without surrendering aesthetic culture, by having all the powers acquired by such culture placed at command for the accomplishment of a life-aim in accordance with motions of benevolence;" and "benevolence, . . . the service of others, constitutes the focal point of ethical ideas."² RICHARD T. ELY.

[A reply by Prof. Simon Newcomb, to this article, will appear in an early number.—ED.]

DR. HUGHLINGS-JACKSON ON EPILEPSY.

FOR many years Dr. Hughlings-Jackson of London has been advocating a theory of epilepsy highly important for its general bearings on

¹ See work, 'Zweck im recht,' A résumé of his arguments may be found in his article, "Die geschichtlich-gesellschaftlichen Grundlagen der Ethik," in *Jahrbuch für Gesetzgebung, Verwaltung, und Volkswirtschaft*, für 1882.

² See Lotze's 'Practical philosophy,' Professor Ladd's edition, Boston, 1855, pp. 58-60.

physiology and psychology, and for its harmonizing with recent results obtained by experiments on animals. An era in the study of cerebral physiology was made when Fritsch and Hitzig discovered that the cortex of the brains of dogs was directly excitable, and that the result of such excitation was a series of co-ordinated movements of definite parts of the body. Dr. Jackson carried this fact over into pathology, and interpreted an epileptic discharge as nothing else than a sudden, rapid, excessive, and discharging cortical lesion: to use his own forcible language, it is simply a brutish development of many of the patient's ordinary movements. "Speaking figuratively, we may say that the epileptic discharge is trying to develop all the functions of the body excessively, and all at once: a severe fit is a fairly successful attempt. Let me give a very simple illustration. If there be a centre for locomotion, then, during slight sequent discharges of its elements in health, there is walking or running; but if very many of those elements were to discharge suddenly, rapidly, and excessively, the man walking or running would not go faster: on the contrary, he would be stopped, would be stiffened up into a tetanus-like attitude by the *contemporaneous* development of many locomotive movements."

In a recent article (*Brain*, April, 1886), Dr. Jackson has further extended and in part modified his theory. His former position was that all discharging lesions issued from the cortex; i.e., the highest developed centres. He now admits that some such discharges have their central seat in less highly organized brain parts. That such is the case in animals was shown by such facts as that convulsions are possible in a rabbit through rapid bleeding, when the brain proper has been removed. This fact Dr. Jackson now carries over to human pathology in a very ingenious way. The fits involved by a discharging lesion of a lower centre, i.e., a medullary centre, would be apt to be connected with the respiratory apparatus which is represented in that region. Now, these 'inward fits,' or respiratory convulsions (laryngismus stridulus), occur mostly in children under one year of age, not often after two. This fact Dr. Jackson interprets as follows: at that period the highest cortical centres are not developed; of the activities developed in the infant at that time, these automatic vital functions are represented in what are then its highest functioning centres; and it is a discharging lesion from these that we see in a respiratory convulsion. The cause of the rapid and excessive discharge is shown to be a rapid increase in the venosity of the blood, which, when mild and gradual, serves as the normal stimulant of that

respiratory centre. Furthermore, the spreading of the convulsions to the trunk and limbs finds its explanation in the fact that almost all the muscles of the body are at the call of the respiratory mechanism, when such additional strain is necessary in order to succeed in the fight for breath. And the whole series of facts finds a striking corroboration in the experiments of Saltmann, who found that the cortex of young puppies was unexcitable before a certain period, owing to the fact that these higher paths of motor effects had not yet been laid down. Dr. Jackson's view of epilepsy has met with considerable favor; and the modification of it now presented adds to this very suggestive, original, and ingenious interpretation of the facts of cerebral physiology and pathology. J. J.

ASTRONOMY IN APPLETON'S 'ANNUAL CYCLOPAEDIA.'

APPLETON'S 'Annual cyclopaedia' has for several years past included a summary of astronomical progress. These summaries have been so far from satisfactory as to call for some critical attention. They have been lacking in nearly every quality which they should have, — literary form, appropriateness, judicious selection, well-digested conclusions, and freedom from doubtful speculations. That for 1885, which has just been issued, does not show the slightest improvement, unless it is that the scissors are less freely used than formerly. In the qualities of redundancy and deficiency it seems, if possible, worse than its predecessors. As examples of the former, we have a whole column devoted to Dr. Huggins's supposed photographs of the solar corona, mixed up with his opinions of its nature and cause. A column is devoted to the red sunsets, which are not shown to have been more numerous than they always have been since the memory of man. Nearly the same space is devoted to pointless remarks upon eclipses in general and the two eclipses of the year. Not a word is said about the observations of these eclipses, — a deficiency which is perhaps compensated by the information that the next central eclipse visible in New Zealand will occur in 1927. The table of periodic comets has nothing to do with the astronomy of the year, and omits the only element of the slightest popular interest; namely, the times of perihelion passage. For the paragraph on occultations it is hard to imagine a *raison d'être*, unless it was to fill space. No allusion is made to any observations of an occultation during the year. More than a page is devoted to the system of telegraphing astronomical discoveries, which has been in operation for several years,

and had, we think, been mentioned in previous volumes of the 'Cyclopaedia.' Any thing more valueless than the paragraph on bibliography it would be difficult to conceive. It concludes by informing us that "the *Sidereal messenger*, the only astronomical journal published on this continent, is issued monthly by Prof. W. W. Payne of Northfield, Minn." This journal so well deserves popular support, that we have no hesitation in repeating the announcement. The unsoundness and inconsistency of the remark on the solar spots are curious. We are first told that there has been no abatement, up to 1885, in their number or magnitude, and that suspicion therefore attaches to the theory of their periodicity. This is followed by several statements fixing the maximum in 1884 or 1885. As a matter of fact, Dr. Wolf fixed the maximum at the end of 1883.

Among subjects omitted may be mentioned, of American origin, Langley's 'Researches on lunar heat;' Hill's 'Contributions to the lunar theory;' Hall's 'Investigation of the satellites of Uranus and Neptune;' the discussion of the astronomical day, which has filled so prominent a place in scientific literature; and the work of Rowland and Pickering in celestial photography. The important foreign works which have been passed over, and which might have well taken the place of the stuffing that forms a third of the article, are too numerous to mention. The only conclusion which can be drawn is, that one-half of the article is better fitted to fill space than to give valuable information about the astronomical progress of the year.

BIMETALLISM IN THE UNITED STATES.

PROFESSOR LAUGHLIN has produced a most valuable book both for study and for reference. It is not only a history, but a critical examination of successive policies in the light of economic theory. It might, perhaps, be objected that the lesson is sometimes a little too obtrusive; but the independent reader who feels under no obligation to accept the author's conclusions may well pardon this fault. The author is a decided monometallist, and presents the arguments from the point of view of his own school. No objection can, however, be made to his statement of facts, and the reader can readily separate his arguments from them. One of the characteristic features of the book is the number, variety, and fulness of its graphic representations, which add greatly to the value of the work, and would have added yet more had they been better planned and arranged.

The history of bimetallism in the United States. By J. LAURENCE LAUGHLIN. New York, Appleton, 1886. 8°.