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'ëtre*, 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°.