

themselves written less successful books or articles on the same general subject.

5. The critics present denials, dogmatic assertions, negative testimony. Not one particle of positive evidence has yet been presented against the books which are so vigorously condemned. Meanwhile the fact remains that, though six or seven volumes and a score of articles have already been published, only two slight errors have thus far been pointed out, and they were promptly and gratefully acknowledged.

Other facts and considerations will undoubtedly suggest themselves, but perhaps it were well to consider these first in forming one's judgment as to the books and their critics.

WM. J. LONG.

STAMFORD, CONN., May 7, 1904.

[We hope that this discussion will not be carried further.—EDITOR.]

THE METRIC SYSTEM.

TO THE EDITOR OF SCIENCE: The suggestion of Professor W. Le Conte Stevens that a compromise be made between the metric and the British system of weights and measures, making a foot the fourth part of a meter and an inch two per cent, smaller than the British inch, might be a good one if the English-speaking race were to disappear from the earth, and all its tools and its technical literature be destroyed, but as long as that race continues to use its existing tools and books, so long must the inch persist with its present value. His article is useful, however, in showing the impossibility of the general adoption of the metric system in its present form by the people of this country. He well says: "What may be the form taken by legislation in England and the United States, the people can not be compelled to adopt nomenclature that is thrust upon them as a substitute for that to which they have always been accustomed."

WM. KENT.

ICHTHYOLOGY IN THE 'ENCYCLOPÆDIA AMERICANA.'

TO THE EDITOR OF SCIENCE: Referring to Dr. Gill's note on the 'Ichthyology of the En-

cyclopædia Americana,' I may say that he is quite right in supposing that the proofs of the figures which illustrate my article on fishes were not submitted to the author. Many of these seem to be wrongly named as noted by Dr. Gill.

DAVID S. JORDAN.

SPECIAL ARTICLES.

THE MULTI-NIPPLED SHEEP OF BEINN BHREAGH.*

ON two former occasions† I have had the honor of presenting communications to the academy concerning the multi-nippled breed of sheep on my farm at Beinn Bhreagh, near the town of Baddeck, Nova Scotia.

It will be remembered that in 1889, upon the purchase of some property at Beinn Bhreagh I found myself in possession of a flock of sheep; and that in the spring of 1890, one half of the lambs born upon the place turned out to be twins.

This large percentage of twins led me to examine the mothers of all the lambs with the object of discovering, if possible, some peculiarity that would enable us to distinguish twin-bearing ewes from others.

Upon examining the milk-bags of the sheep a peculiarity was observed that was thought might be significant. Normally, sheep have only two nipples upon the milk-bag, but in the case of several of the sheep examined, supernumerary nipples were discovered which were embryonic in character and not in a functional condition. Some had three nipples in all, and some four. Of the normally nipped ewes 24 per cent. had twin lambs; but of the abnormally nipped 43 per cent. had twins. The total number of ewes, however, was so small (only 51) as to deprive the percentages of much significance. Still the figures were suggestive of a possible correlation between fertility and the presence of supernumerary nipples, and it seemed worth while to make an extended series of experiments to ascertain (1) whether, by selective breeding, the extra nipples could be developed so as to become functional, and (2) whether ewes possessing four functional nipples instead of two would

* A paper read before the National Academy of Sciences in Washington, D. C., April 21, 1904.

† See SCIENCE, Vol. IX., May 5, 1899, pp. 637.