Letters to the Editor

Relative to the B.S. Degree

After a careful reading of the article entitled "Need for a meaningful B.S. degree" (*Science*, 1946, **103**, 438), I fail to find any references to the A.B. degree, which is far the more common in the colleges. It has been my experience in placing men in graduate positions over a long period of years that graduate schools give preference to A.B. graduates over those who hold the other degree, mainly because the A.B. degree stands for a larger amount of preparation.

In our own institution, which I believe is typical of most others in its class, requirements for the A.B. in Physics include a major of 25 to 35 hours in that subject, 20 to 25 hours in Mathematics, and 10 to 20 hours in Chemistry. The requirements for a Chemistry major are similar, with the emphasis on that subject.

The trend of the discussion in the article mentioned above seems to imply that those who are employing scientists prefer the B.S. degree. Is that a fair statement of the case?

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The Metric System and the Historical Record

Discussion of the history of weights and measures in "Scanning Science" (*Science*, 1946, **103**, 446) and subsequent comment by Arthur Bessey Smith (*Science*, 1946, **103**, 634) invite elaboration.

Duplicates of the standard meter and kilogram, now in the custody of the National Bureau of Standards, were brought to this country late in 1889 and on 2 January 1890 President Harrison officially received and opened these prototypes, allotted to the United States as national standards of weight and length. Although that event created considerable interest in scientific circles and induced widespread notice by the daily press, apparently the general public gave no more than passing attention to the advantages of metric units of weight and measure.

Earlier, in 1866, as Arthur Bessey Smith points out, Congress sanctioned use of the metric system and indicated its relation to the system customarily employed. As the result of legislation in that year, no contract or dealing, or pleading in any court, could be deemed invalid on account of reference to metric weights and measures. No metric standards were established, however.

A proposal to legally define the customary units of weight and measure in terms of the metric standards in possession of the National Bureau of Standards was contained in bills introduced by Representative A. R. Somers (H. R. 8974) and the later Senator Royal S. Copeland (S. 3609) in the 75th Congress, second session, 1938. Similar bills had been introduced by the same sponsors in the first session of the same Congress as H. R. 7869 and S. 2789. The import of the proposal may be ascertained from the following excerpt from testimony by Lyman J. Briggs, director of the National Bureau of Standards, at the hearings on H. R. 7869: "By defining the inch and the pound as certain specified fractions of the meter and kilogram, we base our customary system of weights and measures on material standards that have been shown to be highly stable and constant in value. But in doing so we do not for a moment relinquish the units of our customary system of weights and measures. On the contrary, for the first time in the history of our country their values will be definitely established by this legislation."

From time to time use of the metric units of weight and measure has been seriously urged by various groups and members of Congress. One bill to that end (H. R. 10, 69th Congress, first session, 1926) was subjected to extended study, and the hearings were published. This particular bill provided for the use of metric units in merchandising transactions only and allowed businessmen a period of 10 years to make necessary adjustments. A somewhat different objective is exemplified by H. R. 12580, 66th Congress, second session, which was designed to decimalize the customary units though not to replace them by the metric.

The metric system has figured incidentally in occasional legislation to establish standards for special uses. A Federal enactment in 1893, for example, established "the only standard gage for sheet and plate iron and steel in the United States of America." For each number of gage, tables specified the approximate thickness (in inches and millimeters), weight per square foot (in ounces, pounds, and kilograms), and weight per square meter (in pounds and kilograms). The Secretary of the Treasury was required to prepare suitable standards in accordance with this law.

The charge in "Scanning Science" (*Science*, 1946, **103**, 446) that Congress has left practically unexercised the power of fixing the standard of weights and measures, granted by the Constitution (and previously by the Articles of Confederation), is perhaps a little too strong, even in reference to the metric units. Review of the pertinent literature discloses that several economically important Federal statutes have been passed under the power referred to, and others under the interstate commerce clause of the Constitution. Federal statutes, standards, or orders relate to a varied list of items which includes barrels and baskets, bills of lading, coins, cosmetics, drugs, electrical measure, foods, metals, packers and stockyards, precious stones, proof spirits, and screw threads.

A present problem more urgent than further Federal legislation is that of achieving greater uniformity in the State laws pertaining to bread, coal, packages of merchandise, weighing and measuring devices, and other commodities or articles of direct concern to the public.