Letters

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in the English system of units, elegantly and systematically developed the logical conclusion: the potential confusion inherent in the English system of units can be avoided by use of the metric system. (My sharp-eyed critics all noted, implicitly or explicitly, that the various definitions and revisions of the English units are always made in terms of the metric system.) As a postscript to Allen's letter, I wish to quote a relevant resolution from the recent 12th general assembly of the International Union of Geodesy and Geophysics (Helsinki, August 1960):

"The IUGG, considering international procedure concerning the use of metric units in scientific reports, strongly recommends that this practice be adopted in all papers submitted to IAGA. Thus heights of rockets and satellites should be given in kilometers instead of miles and altitudes of balloons and aircraft in meters or kilometers instead of feet."

As for Newell's ribbing on the subject of conversions, hidden in his first paragraph is some useful advice for those news media which are not concerned with accuracy and which want to "have what they say remembered." (I supposed that *Science* was concerned to have its articles be first correct and, if possible, remembered.) It is, of course, a psychological accident in the case in question that the number 9988, which cannot be justified on any technical grounds, appears acceptable, accurate and mnemonic, whereas the number 10,009, which is reasonably justifiable, appears to be either an error or a joke, and virtually demands rounding downward to 10,000. But once such a rounding has been effected, especially if it is then converted to 5 tons, the reader has lost all contact which the apparent degree of accuracy expressed in the original data. In fact, the question then arises, English or metric tons?

In general, I would recommend quoting at least the original data. If *Science* editors believe that a significant portion of *Science* readers do not comprehend the metric system, I would recommend, in this specific instance, a rendition such as: "4540 kg (approx. 10,000 lb)."

Now the witty Newell has also scored a more prevalent problem in conversions: the apparent increase in accuracy through use of conversion factors with *more* significant figures than the original data. But a word of caution to us would-be pedants: Newell happily increased four-place accuracy (4540 kg) to 13-place accuracy through use of a conversion factor with ten or more places (0.4535924277 . . . kg/lb), but unhappily he overlooked the revision (1 July 1959) of this factor. New value: 1 lb = 0.45359237 kg. One pound avoirdupois, that is.

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On Ignoring Ancient Asia

Is there not some imprecision in the first two sentences of Hutchison's article [*Science* **132**, 643 (9 Sept. 1960)]? Hutchison says: "The main interest of the ancients in the absorption of sound was an indirect one. It concerned the fabrication of bells, which, until about the 8th century, were made of beaten iron sheets riveted together." By *ancients* he certainly does not intend to include the Chinese bell founders, who, long before the 8th century A.D., cast their bells.

That the background to the vast bulk of what constitutes our "science" today lay in Europe is traditional; is it wise to continue to ignore ancient Asia? Must we continue the error of the past in regarding Europe and Asia as two separated continents?

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