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Weightlessness in Space

Certainly astronauts, whether near or remote from the earth, appear weightless because they are in a free-fall condition. However, whether they really are weightless or not depends on one's definition of weight. Mueller's claim (Letters, 28 July), that the reason for weightlessness during an earth-moon trajectory has nothing to do with decreasing gravitation, is consistent with his definition of weight; however, this definition is not the only one given by dictionaries. For example, the fourth edition of the *Concise Oxford Dictionary* defines weight first as "Force with which body tends to centre of attraction," and, as an example of the word in context, gives the phrase: "the weights of the planets." Since the planets are not restrained from accelerating, they would be excluded from having weight by Mueller's definition. According to the *Concise Oxford Dictionary*, weight is reduced with decreasing gravitation, and very much so during a trip to the moon.

It is not important which definition, if either, is on higher authority. My earlier letter (9 June) was written in the cause of aiding the public understanding of science. This cause is not helped if press releases on science use a common word in an unusual sense without a note of explanation.

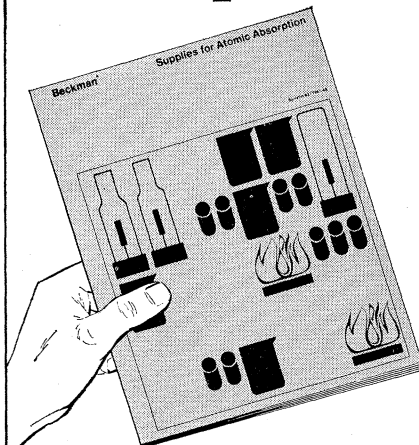
F. E. M. LILLEY

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Prominent Noses

In his paper discussing variation in solar ultraviolet at different latitudes as a possible basis of racial differentiation in man (4 Aug., p. 501), Loomis limits himself to the question of skin pigment. It has occurred to me that his theory might be extended to another anatomical feature roughly associated with skin color and with latitude, namely, the prominence of the nose. As so many people on occasion are painfully aware, the nose is without question an outstanding receptor of solar rays. In fact, it is difficult to imagine what other evolutionary reason there could be for the sharply thrust-out nose in the latitudes of lesser solar intensity. . . . As Loomis suggests, the early hominids moving northward into Europe, particularly during warm interglacial periods, may have lost much

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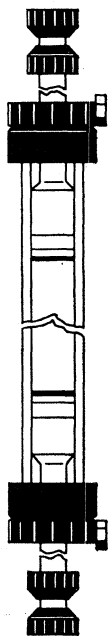
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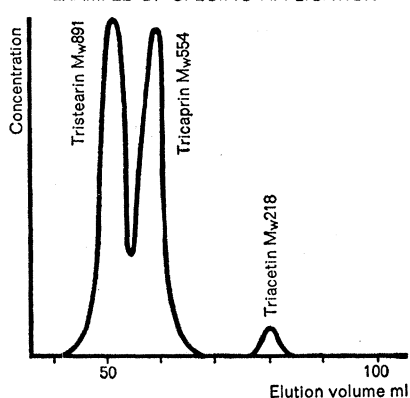
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Methanol	1.9	3.5-4.0
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Chloroform*	1.8	3.0-3.5
n-butanol	1.6	3
Dioxane	1.4	2.5-3.0
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*Containing 1% ethanol.

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of their body hair and skin pigmentation half a million years ago. But when it got cold they had to cover most of their skin to keep warm (or else retreat), and it is perhaps at this time that the nose came into prominence.

DONALD V. MCGRANAHAN

47, chemin Moise Duboule,
Geneva, Switzerland

Writers: Fancies and Foibles

We have had considerable discussion of "freight trains" in scientific writing. Another trick of poor writing perhaps deserves christening. Since it encourages freight trains to emerge, it might be called "verb switching." The principle behind verb switching is very simple: whenever a verb with a reasonably definite meaning threatens to appear, the poor writer carefully converts it to a noun or gerund and inserts a weak, essentially vacuous verb to fill out the grammar. Thus, instead of saying that some step improves the accuracy of a measurement, the writer will say that it "makes an improvement in..." or "aids in improving..." In place of "isolate," he will write "produce isolation." And so on. Once the principle has been grasped, endless examples can be constructed.

Verb switching is often aggravated by gerund phobia. Presumably, the victim was once frightened by a dangling participle and now avoids words ending in -ing whenever he can. Thus, instead of writing about calibrating the equipment, he will write, "the calibration of the equipment." This habit might be called "tioning."

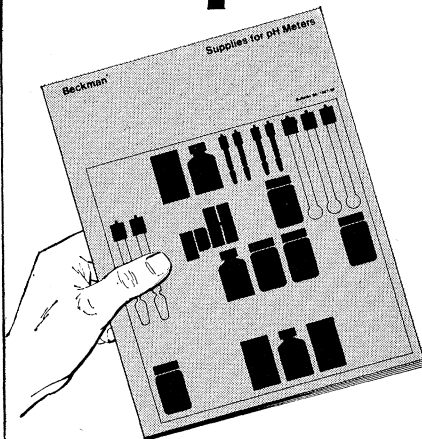
PAUL I. RICHARDS

*Technical Operations, Inc.,
Burlington, Massachusetts 01803*

Bad grammar is unfortunately not restricted to authors. It (and pedantry) are also to be found, although more rarely, among editors. In this latter case the problem is of course more serious. In addition to letting some of the bad grammar of their authors pass through, they sometimes make good grammar into bad or change correct but free sentences into stilted ones. It is disconcerting to have one's writing altered to a style one deliberately avoids using, or to have qualifiers such as "perhaps" omitted.

For example, in a paper of mine published in another journal in the past year the editor changed "The insecti-

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