

Letters to the editor

3

Unsystematic Rules

Sir:

The recent paper "Physicists and the English Language" (*Physics Today*, February 1950) makes the reader wonder what is the aim of science today. Historically, the procedure of the scientist has been to seek order among chaos and, from what little order he can discover, to formulate hypothetical laws of nature. The scientist has tried to assemble as much information as possible and to present it in the simplest and most precise way.

Precision of speech is of utmost importance to the scientist. If his terminology is sloppy and unwisely chosen, his own clarity of thought may be impaired and his ability to communicate with others may be drastically reduced. The difficult becomes simple when expressed in the most suitable terminology.

It is hard to know exactly what Dr. Brown is driving at, but his thesis seems to be that any systematic rules of terminology or grammar are bad for the physicist. If this is his idea, I do not agree with it.

The article states that an improved terminology will be acceptable if it is part of a "systematic program of simplification worked out in cooperation with philologists". If Dr. Brown had cared to read the Moon and Spencer papers on terminology before he commented on them, he would have found that a number of language experts were consulted in the development of the material. The philologist, however, can never take the place of the scientist in formulating scientific terminology, and if any improvements are to be made, they must be made by the scientist himself.

Though it is true that the endings *-or*, *-tion*, *-ance*, and *-ity* are not used with perfect consistency in modern languages, this fact does not prevent the physicists from assigning precise meanings to them when they are used in scientific terminology. Such a procedure will be helpful in making thinking more precise and teaching less painful.

Perhaps Dr. Brown does not take his own recommenda-

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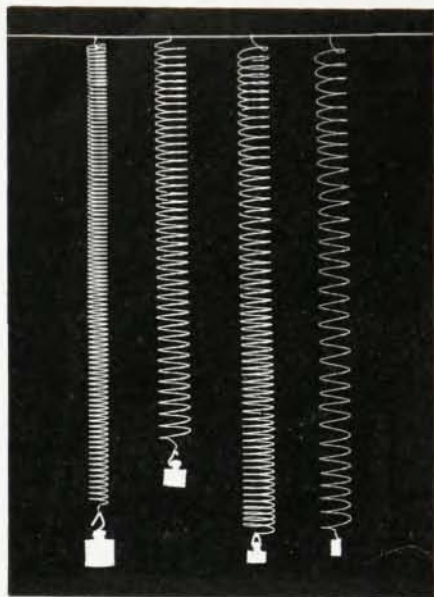
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LETTERS *Continued from page 3*

tion of the vague and sloppy seriously: he still writes tolerable English.

DOMINA EBERLE SPENCER

Providence, Rhode Island

Sir:

Congratulations on the publication of "Physicists and the English Language" by W. F. Brown, Jr.! I enjoyed it more than any other article I have seen in *Physics Today*. I am glad to see that at least one physicist not only knows how to write, but also knows something of what language is all about.

GEORGE A. FINK

Burlington, Iowa

Sir:

It seems to me you have achieved a most admirable editorial policy. . . . One's career is one's duty and (God grant) also one's privilege. But all of science should be one's delight. Your February issue contains food for deepest thought (Einstein)—a sunburst of new knowledge ("Radioastronomy")—valuable admonition (William Fuller Brown)—and long awaited news (British plutonium).

Congratulations.
San Francisco, California

R. R. NEWELL

Sound Optics

Sir:

Winston Kock's story on "Microwaves and Sound" (*Physics Today*, March, 1950) presents some possibly new applications of optical principles to beam radiators for microwaves, but hardly for sound waves.

I, for at least one, published technical articles twenty-five years ago, on the applications of these principles to sound waves, and particularly to microphones and loud speakers, for control of their directional characteristics. . . . I constructed and tested a device exactly like that pictured on page 21 for lateral equalization of directional distribution, through the audio frequency range of loud speaker radiation.

I might add that ripple tanks, with water or mercury, offer beautiful demonstrations of these various and interesting effects.

B. MIESSNER

Morristown, New Jersey

Mr. Miessner is most certainly correct in stating that the wave nature and therefore the optical properties of sound waves have been well appreciated since Rayleigh's time. Rayleigh himself discussed the analogy between optics and the focusing of sound waves by parabolic reflectors. Many devices have been proposed employing slats and cellular structures to project the sound in a certain direction much like blinders on a horse. They are not lenses, however, because the velocity of propagation through them is unchanged. The particular lens referred to is a waveguide type microwave lens and it is pointed out in the article that this type is not effective for focusing sound waves. Such waveguide lenses, oddly enough, do focus waves in a ripple tank because water waves change their phase velocity when passing through narrow channels. Sound waves do not.

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