

## 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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