The cocoons of *Diprion hercyniae* (Hartig), for example, exhibit a disparity of 1 to 2 mm in length (*7*). As with other parasitic Hymenoptera of similar habit, the female may generally deposit haploid eggs on small hosts and diploid eggs on large hosts (3).

S. E. FLANDERS
Citrus Research Center and Agricultural Experiment Station, University of California, Riverside

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Flanders's major criticism of the report (*1*) appears to be that my analysis of the situation in *Dahlbominus fuliginosus* is based on a misinterpretation of his belief that *facultative* variability in responses of the spermathecal gland in freeing sperm from the sperm capsule is the basis for sex-ratio variability in Hymenoptera. The fact is that in the hymenopteran *D. fuliginosus* the production of male- and female-producing eggs during oviposition is not influenced by the environment or by the host (*2*). It is clearly established that the initial sex ratio of *D. fuliginosus* is not affected by the size of the host. Large hosts differing in volume by 37 percent and in weight by 41 percent produce only 2.7 percent more females than smaller hosts, and the reduction in number of males was shown to be due to differential mortality. The stimuli that result in the release of sperm from the female sperm capsule of *D. fuliginosus* are no doubt elicited by passage of the egg along the oviduct, as in *Nasonia* (*Mormoniella*) *vitripennis* (*3*), and not through contact of the antennae, legs, or ovipositor of the parasite with its host. In any event, the hosts used in all tests in the study criticised by Flanders were of the same species, and of the same size and age (*1*).

The suggestion that selection "simply isolated the females characterized by a low glandular response to environmental stimuli" is difficult to reconcile with the facts reported. If this were so, why do the selected, high-male-producing females when known to be inseminated by wild, low-male-producing males always produce low-male progeny? Flanders's interpretation would require the spermathecal gland to alter its response according to the type of sperm to be released when SR and wild sperm are both present in the one sperm capsule. As indicated in my report (*1*), the proportion of the two types of marked sperm taking part in fertilization under such circumstances was random and could not have been influenced by the host or the environment. That discontinuity in the release of sperm is the regulating mechanism for male production by inseminated *Dahlbominus fuliginosus* females, as suggested by Flanders, appears to be unlikely indeed. It is much more likely to be due to some form of genetically regulated dimorphism of the sperm (*4*).

A. WILKES
Entomology Research Institute, Canada Department of Agriculture, Ottawa

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Radon-222 in Mine Atmospheres

We have measured in several mines what we believe to be barometrically induced changes in the flux into mines of radon-222 (Rn), a noble gas introduced into the interstices of rock surrounding the mine by the decay of radium-226 contained in the rock. A falling barometer is regularly associated with an increased flux of Rn into the mine; a rising barometer is associated with a decrease in Rn flux. This is consistent with the report by Raymond F. Boyer—"Coal mine disasters: frequency by month," *Science* **144**, 1447 (1964)—citing the increased frequency of major mine diasters during periods of barometric minima.

The effect is perhaps a combination of convection and diffusion. A change in atmospheric pressure is transmitted more rapidly into the mine atmosphere than into the interstices of adjacent rock. If pressure has decreased, pressure in the mine will be less than pressure in the rock interstices, and a convective flow of interstitial gas into the mine will be induced. If pressure has increased, pressure in the mine will be initially greater than pressure in the adjacent rock interstices. A convective flow into the adjacent rock of mine air will occur and will dilute the interstitial gases in the surface rocks and hence reduce the Rn concentration gradient in the shallow rocks. Such a reduction will cause a decrease in the diffusion-driven flux of interstitial Rn into the mine.

GERALD L. SCHROEDER
Radioactivity Center, Massachusetts Institute of Technology, Cambridge 39

25 June 1964

Telemetry of Dolphins

Mackay's excellent report [*Science* **144**, 864 (1964)] on radio telemetry of physiological variables of an untethered dolphin prompts me to call attention to an earlier physiological measurement made on a free-swimming porpoise by other means [C. E. Hendrix, *U.S. Naval Ordnance Test Station Tech. Note 304-50* (1960)]. The purpose of this particular measurement was to determine skin temperature, but the principle appears applicable to other slowly changing variables for which adequate transducers exist.

C. E. HENDRIX
Space-General Corporation, 9200 East Flair Drive, El Monte, California

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