fluence the results too greatly (I am prepared to give details on request).

Fourth, I did not mean to give the impression that "one will inevitably get the correct answer" by these methods of estimating. Instead, I said: "The resulting estimate can be, of course, completely wrong, but the probability that it will be is very small, and the probability that the result will be right is high." And, later in the article: "only by trying can we tell whether it is valid or invalid."

Fifth, as to the strong feeling of most scientists, I would like to reply that there are a number of good scientists, too, who have criticized my paper the other way, for being too pessimistic, as I have learned from various discussions and letters.


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## UNESCO's Role in the Indian Ocean Expedition

I have read the recent article on the International Indian Ocean Expedition by Knauss [*Science* **134**, 1674 (1961)] with great interest. One significant omission should be pointed out. This concerns the role of UNESCO, which in addition to sponsoring the Indian Ocean Biological Center in India is also cosponsor of the expedition. This sponsorship was authorized by a resolution of the 11th session of the general conference of UNESCO in 1960.

Sponsorship of the expedition by UNESCO has been, and continues to be, more than nominal. Working in close collaboration with the International Council of Scientific Unions' Special Committee on Oceanic Research, organizer of the expedition, UNESCO has provided the financial means for bringing together participating scientists in the fields of marine meteorology (Bombay, July 1961), zooplanktology (Cochin and New Delhi, August 1961), and nutrient chemistry and primary productivity (Honolulu, September 1961). During the meeting in Honolulu, scientists from seven nations worked together, ashore and aboard the research vessels *Vitiaz* (U.S.S.R.) and *Gascoyne* (Australia), in a comparison of methods to be used during the expedition. Scientific equipment is being provided for research vessels of India and Pakistan. Fifteen fellowships have been awarded young scientists

from the Indian Ocean region to permit them to gain practical experience by working aboard ships of the expedition. Several experts are being recruited to work with local scientists on programs related to the expedition. All told, UNESCO will spend in 1961 and 1962 about $250,000 on various projects concerned with coordination and other international aspects of the expedition, somewhat more than half of its total budget in marine science.

It should also be noted that at its first session (19 to 27 October 1961) the Intergovernmental Oceanographic Commission adopted a resolution directing its secretary (directer of UNESCO's Office of Oceanography) to assume additional coordinating functions for the expedition. Hence, by the time the expedition is in full swing, the role of UNESCO may be even more significant.

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## The Competitive World of the Scientist

F. Reif's stimulating article, "The competitive world of the pure scientist" (*1*), brings to mind an earlier discussion of this theme—namely, Robert K. Merton's presidential address to the American Sociological Society in 1957, on "Priorities in scientific discovery" (*2*). Like Reif, Merton points out that the "selfish" motives of scientists may be both functional or dysfunctional for the progress of science, and, moreover, that the competition for originality is by no means a modern phenomenon. Thus, he quotes François Arago, one of the permanent secretaries of the French Academy of Sciences, who wrote in 1839, apropos a priority controversy involving Cavendish and Watt, that "to describe discoveries as having been made 'about the same time' proves nothing; questions as to priority may depend on weeks, on days, on hours, on minutes" (*3*).

My purpose in writing this letter is twofold: (i) to make Reif and the readers of *Science* aware of another treatment of the priorities problem—a treatment both exhaustive and delightful; and (ii) to point out that competition for originality may occur not only between the practitioners of a discipline but also between the ad-