and their followers valued very highly that—I am quite sure—was expressed by the word *Geschick* in their motto. Shiga, the discoverer of trypan red, was, in Paul Ehrlich's judgment, certainly a *geschickter* collaborator and was probably proud of it.

WILFRED C. HULSE
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Science and the High-School Student

There seems to be some likelihood that the definitive results of Mead and Métraux's study of the "Image of the Scientist among High-School Students" [*Science* **126**, 384 (1957)] will be considered as applying only to high-school students and scientists. Since almost all of the appropriate age group attends high school these days, Mead and Métraux's sample is essentially a sample of that age group of the whole population. It is unlikely that this image of the scientist changes much with age. Hence, one concludes that the man in the street has very much the same image. Let us not censure high-school students, even by implication only, for sharing public opinion. The high-schooler who plans to become a scientist has about the same relation to his fellow students as the adult scientist has to his fellow citizens. He may as well get used to it while he is young.

It is likely that the same sort of results would have been obtained regarding physicians, ministers, nurses, or any other dedicated group of people. This not-for-me attitude is directed at the dedication, not at the profession. In view of the fact that about 90 percent of the population has an IQ of less than 120, the not-for-me attitude is common-sense realism, and the high-schoolers are to be congratulated on their good sense.

I suggest an unscientific generalization of the title to "Image of the Dedicated Minority as Seen by the Undedicated Majority."

M. J. WALKER
Storrs, Connecticut

In his comment on our article, M. J. Walker has combined three themes—the rejection of dedication, the extent to which the high-school student's attitude coincides with that of the man in the street, and the reasonableness of students with an IQ of less than 120 rejecting science as a career. As we pointed out, rejection of dedication in all fields of science is a characteristic of the attitude of post-World War II youth; it would extend to any profession which was seen as requiring an extreme degree of commitment. We know of no material that suggests that rejection of dedication and low IQ are systematically related and

believe that there would be variations as the career in question was phrased as more or less intellectually demanding. While the attitude of today's high-school students may be said to prefigure the attitudes of the man in the street tomorrow, it is necessary also to recognize that these students have been exposed, rather more than their forebears, to articulate and concerted attempts to involve them in scientific careers, and so they may differ somewhat from their seniors today. The report is not in any sense designed to blame the high-school students but rather to focus attention on the one-sidedness of a picture of the scientific life which overemphasizes the gap between those who do and those who do not participate in it.

MARGARET MEAD
RHODA METRAUX
New York, New York

Grants Without Grind

An editorial in *Science* [125, 97 (18 Jan. 1957)] has helped to dispel ignorance among scientists about where and how to seek support for research. It has made me think of ways in which foundations, on their part, could improve their relations with research workers.

Years ago, that task would have been simple. The foundation would have endowed a university or a museum, which then would have hired a staff with tenure for life. That kind of security still works well in respect to basic research in many fields. But there is a greatly increased need today for the support of studies related to specific questions of current interest—a support that does not permit so-called "crash" programs to become "slap-dash" programs.

The amount of time and effort of research workers, and of research administrators, that is required to prepare requests for grants and fellowships has become appalling. At a recent conference of foreign medical educators, one of our European colleagues wondered why so large a proportion of the advance made in his field comes from European, rather than American, scientists, despite the greater funds available here. He hinted that this may be because "we in Europe are free from your kind of red tape." While he and his colleagues pursue their studies, we spend our time preparing requests for funds—often repeatedly, because many of them are rejected. The unsuccessful applicant as a rule does not receive the benefit of the critical appraisal which the foundation's advisers may have spent many hours in preparing. One foundation reports that the average number of references is seven; it costs the time of seven scholars to write seven thoughtful letters. (If, occasionally, such letters are written carelessly, both the