while borderline ones are inspected many times each year. The inspector, of course, must have authority to ensure that his recommendations are carried out, and this is where voluntary accreditation and similar schemes fall down. Admirable though voluntary schemes may be for responsible institutions, they leave untouched precisely those places where improved standards are most needed.

In the hope of stemming effective legislation, many groups have recently advocated voluntary codes for humane treatment of animals. This rush of activity suggests the need for such codes. Unfortunately, many scientists seem to regard a college degree as a certificate not only of professional standing but of moral integrity, the holder of which is henceforth beholden to no man for his actions. The infliction of pain on animals, like the infliction of pain on humans, involves moral and social standards which cannot be left solely to individual judgment but should, in a civilized society, also be governed by law.

Individual licensing of scientists, another provision of the Clark-Neuberger bill, has proved most successful in England for over 80 years. In my own experience as a Ph.D. student in physiology at London University I found that the licensing laws had a beneficial effect upon research, particularly among young scientists. Like good research technique, good standards of animal care must be learned, and they cannot be learned unless they are first defined and, where necessary, enforced. The cordial relations between the Home Office and the British scientific community are founded on a mutual interest in maintaining humane standards for laboratory animals, standards under which fruitful scientific work has not been impaired and under which, indeed, scientists are protected from criticism or prosecution by uninformed or mischievous persons.

F. BARBARA ORLANS
7035 Wilson Lane,
Bethesda 34, Maryland

The Randall bill actually is more stringent than the Clark-Neuberger bill. However, its chances of becoming law are infinitesimal, and the Clark-Neuberger bill is the strongest that has any chance whatever of passing.

On the other point, Mrs. Orlans is quite right that all the bills discussed would affect grantees of federal agencies as well as the agencies themselves. The way in which they would be affected, however, is quite different. Under the Fogarty proposal, for example, the investigator would merely affirm in writing his agreement to comply with standards of humane care, handling, and treatment of laboratory animals, set by the Surgeon-General. The Clark-Neuberger proposal would have a far more intimate effect on the laboratory. It requires that animals used in pain-causing experiments be anesthetized whenever this would not interfere with the direct purpose of the experiment, and that animals suffering prolonged pain be painlessly killed. It requires not only the registration of investigators with the Secretary of Health, Education, and Welfare as part of their general responsibilities, but the filing with the Secretary of a project plan before the conduct of each set of experiments in which animals are to be used.—ELINOR LANGER

Advice on Science Fair Projects

As director of the Southeastern Wisconsin Fair, I was somewhat perturbed by a letter that appeared in your issue of 6 March ("Science Fair projects," p. 992). I would suggest that when requests are received from students for advice, they should be told that most, if not all, of the necessary information is to be obtained from their teacher-advisers; that any advice from outsiders is given only after the project has been selected, and then only on minor points. If the project is such that most of the guidance cannot be supplied by the teacher, then it should not be undertaken. The teacher should *certify* that the work is that of the pupil. We have used this system quite extensively and have had good results with it.

It seems to me that it is the teacher's prerogative to insist on a Science Fair project. This is no different from an English teacher's insisting on a book report or an essay from all students, or a speech teacher's requiring all students to participate in a dramatics contest. It would seem advantageous to require some extra work of students in high schools, as this better prepares them for college work.

KENNETH E. MILLER
Chemistry Department,
Marquette University, Milwaukee