

Letters

Animal Experiments: Regulatory Measure in the Senate Presents Hazards to the Public

The reintroduction on 25 January 1963, by Senator Joseph Clark (Pa.) for himself and Senator Maurine Neuberger (Ore.) of a bill, S.533, to regulate animal experimentation supported by federal funds requires that scientists analyze the potential effects upon the public welfare of the provisions of the proposed act so that they may give advice to Congress and the American public concerning it. The bill is ostensibly aimed at promoting the humane treatment of experimental animals. Actually, as the following analysis of the various sections shows, the bill is strictly a regulatory measure and is written in such a way as to present untold hazard to the welfare of the public.

Section 1 declares it to be U.S. policy, "that living vertebrate animals . . . shall be used only when no other feasible and satisfactory method can be used . . . to ascertain biological and scientific information. . . ." If this policy were strictly enforced, all use of vertebrates would be stopped until it could be shown that other methods would not work.

Section 2 requires any person receiving grants to have a "certificate of registration," which is issued according to provisions in sections 3 and 4 if he submits to the Secretary of Health, Education, and Welfare "a brief statement of what is to be done to the animals and of the object of the work. . . ." The Secretary of HEW (section 5) "shall license individuals to engage in experiments [after they have supplied information] in such form as [he] shall prescribe. . . ." Thus, any amount of detail may be required.

Section 4 also requires "an annual report and such additional reports . . . as the Secretary may require . . . [specifying] the number of animals used, the procedures employed, and

such other matters as the Secretary may prescribe, and shall include a copy of any published work. . . ." Section 4 states that "representatives of the Secretary . . . shall be authorized to destroy . . . animals in accordance with rules, regulations or instructions of the Secretary." It also says: "the Secretary may limit the numbers of animals used in experiments that cause pain."

A most serious provision in section 4 (g) is that "animals used . . . in practice surgery . . . shall be killed without being allowed to recover consciousness." There is also a provision that no student may use a vertebrate animal except "under the direct supervision of a licensee. . . ." The provisions are patently absurd as to "practice surgery," and the restriction with regard to federally supported student laboratory teaching could in practice eliminate the use of vertebrate animals in college and medical school teaching because there is no provision for "licensing" teaching assistants.

Despite the protestations of its proponents, this bill is an antivivisection measure in spirit. It masquerades as a "reasonable" measure aimed at promoting better treatment of experimental animals, but its provisions, if enforced, would absolutely cripple medical, veterinary, and other biological teaching, if supported by federal funds as proposed in pending congressional legislation, and the effect upon research would be very serious. The discouragement to innovation imposed by the requirement of prior filing of research plans would by itself be a great impediment to progress because no investigator can know far in advance exactly what turn his studies should take in order to be productive. The requirement of new mountains of paper work and reports would further discourage investigators. It would also increase the cost of research by a significant factor.

The philosophy behind this bill is negative and authoritarian. It provides

no mechanisms whatever for improving animal care or housing. It assumes unproved callousness on the part of students, teachers, and investigators. It ignores the facts that laws against cruelty already exist and that existing remedies against claimed abuses have not been used. This bill is an attempt to circumvent civil rights and the public interest by administrative manipulation. The bill was written by a group of "animal lovers" who are apparently more concerned about animal welfare than about human welfare, as is evidenced by the provision virtually outlawing the use of animals in practice surgery, and by section 1.

One further point deserves emphasis. The new bill differs from earlier bills in that it exempts from the requirement of prior description experiments in which the animal is to be killed before it regains consciousness. This is an illusory exemption because the Secretary of HEW would have no reason to forbid such experiments. (It does not allow students to perform such experiments except under direct supervision of licensees, as noted above.) However, what remain fully controlled are the critical areas as far as public interest is concerned—namely, experiments which bear on the investigation of mental disease, cancer, infectious diseases, surgical diseases, and so on. It is of interest to note that this bill, if enacted, could most seriously hamper the mental health research program being advocated now by President Kennedy, because investigations on unanesthetized animals would be central in any such program. Anyone who is concerned about the public welfare must oppose S.533 in anything like its present form. Nevertheless, congressional mail on this issue is heavy, and the present tally shows support of the bill by more than 90 percent of persons who have written.

MAURICE B. VISSCHER

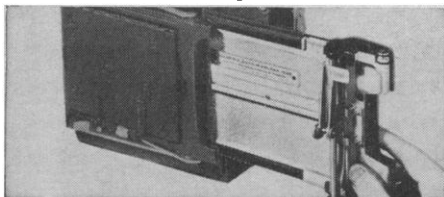
*Department of Physiology,
Medical School, University
of Minnesota, Minneapolis 14*

Grant-Supported Workshops

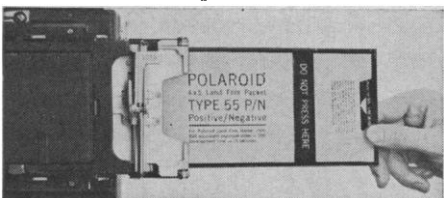
I happened to see the recent editorial "A proper accounting" [*Science* 139, 7 (1963)] reprinted in the *Saturday Review* and I was depressed by the fact of its publication in this way. I do not believe that it will be taken in the

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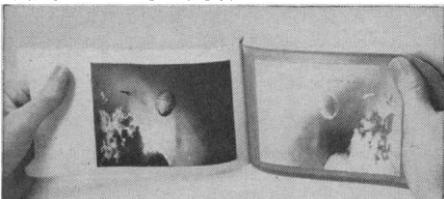
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proper spirit, even by sophisticated laymen, and I feel that self-criticism of this kind should be restricted to our own journals. Furthermore, I do not share the views regarding the grant-supported workshops. In my own area of research, in the past 2 years, we have experienced two important breakthroughs as a result of such workshops. The opportunity for personal contact which is provided by these meetings is not provided by the large open meetings. Equally important is the fact that there is no publication of the proceedings, which permits one to present recent observations which may not yet be fully documented. If the editorial should serve to make such meetings more difficult, then science will have been done a great disservice.

BERNARD L. HORECKER

Department of Microbiology,
New York University School
of Medicine, New York

"Organized Elements" in Carbonaceous Meteorites

In a recent article (1) Anders and Fitch reported on their failure to observe in preparations of carbonaceous chondrites the "organized elements" of Claus *et al.* (2, 3). In other papers (4), Fitch and Anders have shown in detail the difficulty of using morphological criteria to determine the nature and origin of meteorite microstructures in the 5- to 30- μ range.

However, the possible occurrence of microfossils in meteorites has attracted considerable attention, and other workers have identified structures in carbonaceous chondrites that they consider to be indigenous fossil remains. These workers are Staplin (5), Reimer (see 3), Palik (6), Chohnoky (7), Skuja (see 3), Ross (8), Engels (9), and Timofeev (see 3).

On the other hand, several persons, after examining the structures in question, have supported the view of Fitch and Anders that identification of them as microfossils is premature. Thus, Fox (10) has suggested that the objects are spheroids of nonbiological organic matter, together with droplets of sulfur and recent contaminating organisms. Deflandre (11) has similarly claimed that the objects are terrestrial contaminants and artifacts. Briggs (12), who examined preparations made under

sterile conditions to eliminate contamination during preparation, has suggested that some of the "organized elements" are mineral grains and that others are associations of sulfur with organic matter, probably of abiogenic origin. Mueller (13) has recently presented evidence that one class of "organized element," which displays a very complex morphology, is a rare limonite pseudomorph of troilite.

In view of this marked disagreement it is clear that the true nature of the "organized elements" will be established only after prolonged study by many different scientists competent in various fields. Thus, contributions from bacteriologists, palynologists, micropaleontologists, pathologists, crystallographers, histologists, and organic chemists are necessary, and it is improbable that any single person is competent to identify microscopic objects in all these fields.

Since meteorites, particularly carbonaceous chondrites, are difficult to obtain for study and are at present available to only a small group, we have prepared a catalog of photographs (14) of meteorite microstructures for wide circulation. Copies will be sent on application to any scientist. It is hoped in this manner to obtain suggestions as to the identity of the "organized elements" from as wide a group of specialists as possible. It is also hoped that new criteria for identification will be forthcoming.

GREGG MAMIKUNIAN
MICHAEL H. BRIGGS

Chemistry Section, Space Sciences
Division, Jet Propulsion Laboratory,
California Institute of Technology,
Pasadena

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