Letters

Animal Experimentation

A letter by Maurice B. Visscher stated the case in opposition to Senator Joseph Clark's bill (S.533) to regulate animal experimentation [*Science* **139**, 871 (8 March 1963)]. Visscher concluded his letter as follows: "Anyone who is concerned about the public welfare must oppose S.533 in anything like its present form. Nevertheless, congressional mail . . . shows support for the bill by more than 90 percent of persons who have written." Although I am not a biological scientist, I was impressed by Visscher's presentation and exercised my prerogative in our democracy by sending a postcard to Senator Clark, stating my opposition to S.533. I am not an inveterate "letter-to-your-congressman" citizen, but I felt that Senator Clark's bill was a prime representative of a disturbing trend. This trend is characterized by an attitude which can be summarized as "I, Congressman Blank, can do better for the unenlightened people of this country than they can do for themselves."

I had added my "widow's mite" to the 10 percent opposed to bill S.533. However, my duties as a citizen were not so easily fulfilled. Within 1 week, I received a typewritten letter signed by Senator Clark. I quote the first sentence: "Thanks for letting me know of your *support* for Federal legislation providing for humane treatment of laboratory animals."

Several days later I read in an article by D. S. Greenberg [(*Science* **139**, 1187 (22 March 1963)] that congressmen, attempting to maintain the "personal touch," send thousands of letters to constituents by using tape-fed typewriters and machine-written signatures. Obviously, someone punched the wrong button. People, including senatorial staff members, will make mistakes, but I can't help wondering whether my "widow's mite" didn't end up in the "in favor of" column in the tabulation that purports to be 90 percent favorable to S.533.

The irony is that in the same article by Greenberg several columns were devoted to extolling Senator Clark's revolt against the entrenched "establishment" of congressional committees. Greenberg quotes Clark as saying the "establishment [is] quite unresponsive to the caucuses of the two parties. . . . It is what might be called a self-perpetuating oligarchy, with mild, but only mild, overtones of plutocracy." If the "establishment" of conservative committee chairmen seems unresponsive to Senator Clark, think how unresponsive the "establishment" of Senator Clark must appear to citizens like me. Never has the "establishment" of the State seemed more powerful, nor have I, as an individual, seemed more insignificant. Do we truly, as our communist brethren believe, exist only to serve the State?

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Research at the Moscow Medical Stomatological Institute

In June and July 1962 I spent 6 weeks in Moscow and Leningrad, becoming acquainted primarily with Soviet stomatological research and incidentally with programs of health education, the training of stomatologists, and dental care in children. In Leningrad I was shown by Perzaskevich and Kolegov the very impressive municipal stomatological clinics, facilities for dental care in children, interesting clinical research by the physiologist Rubinov, and beautiful cosmetic work in the clinic of Kiandsky. Here I describe briefly some of the work in the principal Soviet stomatological institute, about which I think Americans are not well informed.

The Moscow Medical Stomatological Institute is one of two Soviet medical institutes devoted exclusively to stomatology. It occupies two buildings at separate sites in Moscow, one building for preclinical training and the other for clinical work. It graduates 300 stomatologists a year and treats some 1000 patients a day. Under the cordial and considerate guidance of Rudko, the chief stomatologist of the Soviet Ministry of Health, I was given the opportunity to interview for an hour or two at a time eight members of the faculty of the institute and to see some of their work.

Falin, the anatomist, with his co-workers, has shown through histochemical study of the oral mucous membrane that the keratinization of the oral epithelium varies from area to area and is lessened in gingivitis and parodontal disease; that glycogen synthesis probably is related to keratinization and is increased as the epithelium regenerates in inflammatory states; and (with Fedorov) that the ribonucleic acid of the connective tissue of the gum rapidly increases during inflammation in parodontal disease. He has also shown that there are changes in the dentin in parodontal disease. He has published, in English, microscopic and histochemical observations of the teeth of bronze-age man.

Sharpenak, the biochemist, with his co-workers, has studied the excretion of methylnicotinamide; the permeability of the enamel with respect to organic acids; the effect of human nutritional states particularly in exanthematous diseases, on the development of clinical caries; and the histochemistry of the carious process in man and the carious process in laboratory animals.

Fedorov, the pathophysiologist, with his co-workers, has studied changes in dentin, the regeneration of rat molars, the healing of fractures, and the uptake of labeled calcium after removal of the salivary glands. With Prokhonchukov he has studied the uptake of minerals and amino acids as a function of age, especially in the mandible, where the uptake is less than in the hip bone, and has demonstrated a decreased uptake of isotopic calcium in the mandible in parodontal disease.

Platonov, professor of therapeutic stomatology, with his co-workers, has demonstrated hyperkeratosis and subepithelial proliferation in lichen ruber

planus of the oral mucous membrane; the effect of vitamins in the treatment of desquamating glossitis; the loci of uptake of sulfur-labeled methionine in the mandible; and (with Garazha) the occurrence, in purulent disease of the lung, of similar changes in the terminal phalanges and in the parodontium, where the changes characteristic of chronic parodontal disease accompany pulmonary disease of a chronic purulent type in a large percentage of cases. Platonov, a very experienced clinical investigator, has published neuropathological findings that suggest a neurotrophic factor in parodontal disease.

Sniakin, the physiologist, who teaches in the institute but has his laboratory elsewhere, has been studying the change in responsiveness of the nerve endings of the oral mucosa in various conditions and has shown that change in the "mobility" of these receptors is a very early occurrence in parodontal disease.

Kurliandski, oral surgeon and prosthetic specialist, has done a great deal of research on the surgical treatment of parodontal disease, has made very meticulous studies of the balance of forces between the teeth and the jaws in relation to prosthetic appliances, and has made a striking study of stress patterns in the mandible as demonstrated by optical stress patterns observed with polarized light.

It may be seen from this account that there is a common effort in clinical research on parodontal disease—the condition which, with caries, is the most costly of all stomatological conditions (its cost in the United States is about $1 billion a year).

Perhaps the most exciting work on parodontal disease is that done by Evdokimov and Prokhonchukov, the latter often working in collaboration with Federov. Evdokimov, founder of the institute, who has been, successively, peasant, feldsher, dentist, surgeon, and head of the Moscow Medical Stomatological Institute, has demonstrated, in my opinion, that the primary change in parodontal disease is an insufficiency of the smaller vessels of the parodontium—an insufficiency which is at first latent and then becomes visible as a sclerotic change with swelling of the endothelium; this change leads to occlusion of the vessels and is accompanied in many cases by perivascular infiltration. Evdokimov and his associate showed me very beautiful slides from autopsy material of persons with parodontal disease. This work on the changes in naturally occurring parodontal disease is paralleled by the very interesting work of Prokhonchukov, one of the younger men of the institute, who, besides working on human clinical parodontal disease, has (with Federov) produced in rats, through repeated doses of whole-body radiation, parodontal disease closely similar to that in human beings. Prokhonchukov's observations in this area have been repeated in the United States by Greulich.

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Weinberg Report

Perhaps many scientists should read the Weinberg report, but I suspect that most will read your editorial on "Science, government, and information," and be influenced by your critique. . . . [*Science* **139**, 1015 (15 March 1963)].

Authors and reviewers that I know are honored and highly respected. It is true that these men have proved themselves competent scientists at some time and often remain active in the laboratory after they have become editors and critics. The other side of the coin, which you are recommending be implemented—"that some scientists and engineers 'commit themselves deeply to the job of . . . reviewing' "—deserves ardent consideration on one obvious score: Who will judge the scientific aspects of the manuscripts submitted to a journal if the reviewers and critics of the new breed have not been tried and proved by creative laboratory effort? The referee system is presumably designed to overcome this hurdle at present. Doesn't it work satisfactorily? Is it not a just compromise?

. . . It is better to encourage more, not less, laboratory effort as well as writing, and more of everything that goes with writing—rewriting, editing, and growth for all concerned. The excuse that there is not enough of some particular component in the work chain cannot be answered by cutting at the heart of the whole effort—those who do the laboratory work and write the "first drafts."

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