Letters

Noise and Health

I am quite in agreement with Foote's lament (10 Jan., p. 101) over the exceedingly high noise level in modern housing. In addition to the damage done to privacy, something not held in very high regard in our present-day society, the increased noise, like all excessive sensory input, may have a deleterious effect on our bodies and minds. S. Rosen, the surgeon who developed the Stapes mobilization operation for otosclerotic deafness, observed while on a scientific safari that the Mabaans, a stone-age people in central Africa, live in an environment that roughly corresponds to a soundproof room; he found that they were generally very healthy people, and that the old persons in the tribe could hear as acutely as the young. In our civilization, the upper frequencies regularly drop out of the range of hearing with increasing age, and old-age deafness is very common. Whether or not noise and hearing impairment are causally related is not yet established; there is some research going on which may give us an answer in the not-too-distant future. We know that noise interferes with rest and relaxation and especially with sleep. While sleep, the complete withdrawal from the world around us, is an obvious necessity for physical and emotional health, less complete withdrawal into the quiet of our homes may also be necessary if we want to retain individual integrity and not become parrots conditioned by the mass media.

While visiting several mental hospitals, as a psychiatrist, in Europe last summer, I was surprised to find that the noise level in these institutions was much lower than in equivalent hospitals in this country. Everybody talked in a subdued voice, double doors were common, and paging was done by light rather than by loudspeaker. It appeared to me that, as a result of this sedating atmosphere, patients were generally calmer.

Although we cannot hope nowadays for a quiet, idyllic life unless we take refuge in the mountains or deserts, it appears rational and feasible to take positive steps to reduce the sound level of our modern environment if enough people feel the need to do so.

H. A. DENZEL
Winnebago State Hospital, Winnebago, Wisconsin

Science Fair Projects

I am quite concerned about the role of the junior and senior high schools in the direction of projects for science fairs. Since publication of the paperback *Research Problems in Biology—Series II* (for which I prepared one chapter), I have received a considerable number of letters from youngsters ranging from 11 to 17 years of age asking for one or another type of advice on their projects. It has become clear that many students are being encouraged to do potentially dangerous research without proper supervision. In addition, many of the schools are making entry of a project in the local fair a prerequisite for passing some science course. In other words, many students participate under duress. I am disturbed about this perversion of the creative aspects of science.

HELENE N. GUTTMAN
Haskins Laboratories, 305 East 43 Street, New York, New York 10017

"Multivolumed Rehashes"

Science—and especially biology—owes an enormous debt of gratitude to the publishing houses that during and after the last war introduced the publication in this country of monographs, the annual "Advances" series, and comprehensive multivolume treatises. But the stream of such works has now become a flood—a flood that not only overtaxes the capacity of the scientific reading public but also is an ever-increasing strain on the budgets of university and other libraries that form the captive market for these publishers. Moreover, the newly published works are increasingly repetitive and overlapping. There appears to be no difficulty in persuading publishers to print the papers of almost every conceivable symposium or scientific meeting, even though these may only be rehashes of the same subjects with papers presented by the same participants. In addition, growing numbers of multivolumed, encyclopedic treatises are appearing that not only are devoted to the actual material of a given discipline but that also attempt to include every ancillary and peripheral field.

This publishing situation has already reached an intolerable stage. Some restraint in the flood of publication is clearly necessary. Authors and publishers should take heed before they drown their market.

DAVID M. GREENBERG
University of California, San Francisco Medical Center, San Francisco 22

Nonconformers Again

Journal editors as well as grant administrators encounter the contribution based on scientific reasoning that challenges established precepts or defies measurement by familiar criteria [see "Grants to nonconformers," *Science* **143**, 309 (24 Jan. 1964)]. In my tenure (1946–53) as managing editor of the American Chemical Society journal *Industrial & Engineering Chemistry*, our review mechanics for such manuscripts were similar to those for more conventional papers. However, our choice of reviewers and our charge to them differed significantly. We conserved for these unconventional papers our cherished claim on the services of the scientists most noted for their inventiveness, soundness, and intellectual adventurousness. Additionally, we requested a more sympathetic stance than for reviewing the normal paper—essentially, that the reviewer accept a much more explicit burden of proof

than usual in speaking to any points he deemed faulty in the author's argument.

I do not recall an instance where our reviewers failed to meet the exceptional requirements imposed on them, despite (alas) the insubstantial foundations the authors had almost invariably elected to build on. The reviews were courteous and addressed directly and instructively to the author's primary assertions. While it turned out that our authors overturned no phlogiston theories in that 7-year period, I am reasonably confident that the editors had not missed any opportunities to do so, either.

Since we tried to limit the reviewing burden to about two per year per reviewer, our principal actual traffic with our most select reviewers was associated with the merciful extermination of hopefully conceived but hopelessly misconstructed theories and experiments. I believe they took pride in accepting the rather special moral and intellectual burdens we felt a conscientious profession owed the "crackpot."

I see no reason why a grant administrator should not respond to the unconventional proposal with some comparable shift in evaluation strategy. Indeed, is there any evidence that the good ones don't?

DEWITT O. MYATT
1079 Wisconsin Avenue, NW, Washington, D.C. 20007

The letter on majority rule by research-grant review committees ("Grants to nonconformers," 24 Jan., p. 309) indicates a lack of understanding of the review processes, at least of those of the Public Health Service. When two or more members of a study section dissent from the majority opinion regarding an application for a grant, a split vote is registered and the opinions of both the majority and the minority are noted. When the application comes before the National Council for its second review, it is presented as a special case. In a number of instances the National Council has reversed the decision of a study section or has returned an application to it for reconsideration on the basis of the minority opinion.

PAUL F. HAHN
HARVEY L. CROMROY
Bureau of State Services, Public Health Service, Department of Health, Education, and Welfare, Washington 25, D.C.

Mohole Fanfare

The account in your issue of 10 January 1964 entitled "Mohole: the project that went awry" reads as though it were written by a press agent for "the oceanographic engineer who, to unanimous acclaim, carried out a preliminary phase that set a record for drilling at sea."

"Unanimous acclaim" is hardly accurate. The preliminary phase of Mohole merely proved that with minor modifications existing equipment could be used to lower drill pipe to bottom and to make a short penetration of the sea floor on a no-reentry basis. None of the major problems was solved by this stunt, which in all probability could have been accomplished by private enterprise in less time, with less expense, and with infinitely less fanfare.

Now that the Mohole planning is up against the hard realities of the project, it is inevitable that signs of strain should appear among the personnel who have so gaily committed themselves to this undertaking. It will take more than press releases and self-serving propaganda to effect the transition between a wine-breakfast inspiration and an extremely difficult if not virtually impossible engineering accomplishment. Surely there are better places in the broad field of scientific research in which this money can be spent. But if we must have a Mohole, we should reexamine the wisdom of choosing an oceanic rather than an on-shore drill site. And, in any case, a more restrained, realistic, and scientific tone to the project publicity would be a welcome improvement.

FRANK B. CONSELMAN
514 Petroleum Building, Abilene, Texas 79601

Cigarettes: Testing on Mice

At a recent meeting of statisticians the point was repeatedly made that, while the data support the thesis that inhalation of cigarette smoke is positively correlated with pulmonary malignancy, the mechanism of the relationship is by no means established. In particular, it was stated that tars from cigarettes may induce tumors when painted on mouse skin but that no evidence of pulmonary malignancy has been found from inhalation of cigarette smoke. May I offer some comments on this.

As I understand the literature on carcinogenesis and on induction of mutant cell lines, the probability of inducing a viable, self-sustaining line of carcinogenic cells should be a function of the number of cells in mitosis at any given time, the amount of radiation to which these cells are exposed, the kind of radiation, and the duration of the trial. The number of cells in mitosis will be related to cell type and to the demand for cell reproduction. In the case of any local trauma, of which inhalation of cigarette smoke is an example, cell reproduction rates increase.

It is one thing to give cigarette smoke to a small animal, with small lung volume, in the absence of radiation (indoors, in shielded rooms and cages), for a few weeks or months. It is another thing for a human to inhale deeply, irritating most of the mucosal and epithelial lining of his large lung volume, while exposed to radiation from cosmic rays, potassium decay, and x-rays of various sources over a period of years. Multiply volume by incidence of radiation, by time, and by a probability constant, and one must obtain a population probability.

It is therefore suggested that if the inhalation of smoke by small animals be supplemented by radiation, to compress the time and volume factors, the causal relations between smoking and lung cancer might be clarified.

WILLIAM J. TURNER
231 Oakwood Road, Huntington, New York

More on the 1953 Fallout in Troy

Ralph Lapp suggested [*Science* **142**, 448 (1963)] that I "cite the pertinent statistics" to support my previous statement [*ibid.* **141**, 1109 (1963)] that there had been no increase in the incidence of cancer or leukemia over the past 10 years in the children of the Albany-Troy-Schenectady area of New York State. By law and regulation, physicians, hospitals, and pathologists are required to report all cases of cancer to the local health officer, who forwards copies to the New York State Department of Health, except in New York City, which maintains separate