Letters

Where Scientists Gather

Once again I have returned from a scientific meeting where the facilities were those typical of a large hotel or sports arena. The meeting facilities were either converted ballrooms or designed for athletic events. The blackboards were postage-stamp size; the main meeting rooms were monsters wherein no one in the center, much less the back, of the room could see; there were a great number of parallel sessions; and the audio-visual facilities embraced nothing even as advanced as an overhead projector.

Once again I wondered why we keep doing this to ourselves. Surely there must be a better way of achieving scientific communication. I believe the AAAS, NAS–NRC, and the NSF should join together to sponsor the construction—somewhere near the geographical center of the country—of a scientific center, specifically and architecturally designed for scientific meetings. On some virgin landscape out in Kansas or Missouri, not too far nor yet too near to some jetport, build an *adequate* complex *designed* for effective verbal and nonverbal communication of scientific information. This center would contain the sort of lecture rooms to be found in a good modern university and an adequate number of large auditoriums of sophisticated design. When an audience becomes too large even for the latter, recourse could be had to closed circuit TV, perhaps in the individual hotel rooms. Also there should be a scientific library, small informal conference rooms, rooms for display of scientific equipment, perhaps NSF and AAAS offices, and on the periphery, adequate, nonluxury hotel space, restaurants, and even nightclub concessions for those light-hearted scientists. . . . And all this designed for reasonable cost and minimum frustration.

There appears to be an adequate number of scientific meetings going on the year around, from the very smallest organizations to the Federation of Biological Societies, to insure an adequate, steady market for the facilities of such a scientific convention center. And it could be a showplace for the best efforts and information of contemporary science, both humanistic and physical. I realize the difficulties of capitalization involved in these times of retrenchment, but if such a scientific convention center could not be achieved on our own, perhaps Mr. Hilton could be interested in building a "Scientific Hilton."

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Arrogance over Clean Air

The Greater Boston area has been involved in a series of steps to set and implement air quality standards under the Federal Clean Air Act. Because we feel that these events have raised important questions concerning scientists and public decision-making, we wish to bring them to the attention of the members of the scientific community, many of whom are involved in similar proceedings in other parts of the country under this Act or other environmental legislation (see Abelson's editorial, 20 Mar., p. 1567).

In the fall of 1969, an advisory committee composed mainly of scientists and engineers from universities in this area recommended to the state public health department a tentative set of air quality standards for sulfur oxides and suspended particulates. At a hearing in November which drew an overflow crowd of about 1000 people, a succession of civic groups, representatives from several branches of the medical profession, environment groups, and concerned individuals were almost unanimous in their criticism of the proposed standards as being far too lenient. In general, the citizen groups requested standards which were 25 to 35 percent more stringent for the urban areas and, in addition, requested very much more stringent standards for the outlying regions which already have relatively clean air. The public health department adopted a version which differed only in minor respects from those so strongly condemned at the hearing. Further public outcries were sufficient to cause the matter to be reopened twice again, although the advisory committee continued to defend its proposals as adequate, while, at the same time, characterizing the opposition as emotional and irresponsible. Eventually, the department somewhat strengthened one of its five numerical standards and then sent them to Washington where they now await approval by HEW pursuant to the Act.

This month the chairman of the advisory committee gave a lecture at Harvard on air pollution at which he was asked why such disregard was shown for the clearly expressed wishes of the public, even though the Clean Air Act explicitly emphasizes the significance of the public hearing. He replied that he did not regard the public as "competent" to testify about the standards since they "didn't understand what the numbers meant." He stated further that the main function of the hearing was to allow the public the chance to say that it wants "pure air" and that the job of translating this wish into numerical standards should be left up to the experts on his committee, who should not consider themselves obliged to heed the public's wishes in such technical matters.

As students of environmental engineering and scientists involved in several national and local environment groups, we vehemently reject this elitist contempt for the public's involvement in such an important question. First, we feel that sufficient information was made available to the public to enable concerned nonspecialists to present intelligent opinions which deserved recognition. Furthermore, we do not regard the issue as purely technical; like most environmental problems, such as nuclear power, the SST, noise pollution, and offshore oil drilling, air pollution involves conflicting social priorities as well as esthetic and economic consideration. Finally, the scientific basis for setting air standards is notoriously inconclusive and incomplete. The public thus must play an important role in determining the extent to which we should require margins of safety as a protection against unforeseen harmful consequences of miscalculations or inadequate information.

As more and more federal and state decisions involve scientific questions, many of our colleagues can expect to

serve in official advisory capacities. We urge that they not hide behind a smokescreen of technical expertise in order to deny the general public a significant role in situations where the public has a clear right to have its views heard and respected. In addition we want to state our strong condemnation of the type of irresponsible and gratuitous disregard for the public exhibited by a fellow scientist in just such a situation. We feel that scientists' disrespect for the public can only increase the public's disrespect for the scientist.

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* This letter was also signed by six graduate students in the department of environmental science and engineering.

The Aspiring Eronaut†

I yearn not soon to reach the Moon
  Or tread the plains of Mars.
I would not go from Earth below
  To soar among the stars.
But could I hale a comet's tail
  Into the nearby void,
It would be great to gravitate
  Upon an asteroid.
My mate and I would cleave the sky
  Beyond this earthly moss,
And sail from here to Eros' sphere,
  A dozen miles across;
And we'd explore that little core
  Without a tie or tether,
And lightly leap like mountain sheep,
  My mate and I together.
Then, should we yearn for our return,
  We'd turn our capsule round
With but a push—and, with a whoosh,
  We'd soon be homeward bound.
Ah, when I tire of love's sweet fire
  And joys of Earth have cloyed,
I'd spin my days—my waning phase—
  On Eros' asteroid.

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† Inspired by "Mission to an asteroid" by H. Alfvén and G. Arrhenius (9 Jan., p. 139).

Bettelheim's Essay on Youth

Many of the points of Eisenberg's "Student unrest: Sources and consequences" (27 Mar., p. 1688) and more were cogently made in "Obsolete youth," an essay by the University of Chicago's famed psychiatrist Bruno Bettelheim which was published in last September's *Encounter*. This thoughtful piece, subtitled "Towards a psychograph of adolescent rebellion," has become something of a celebrity: it has been translated into several languages and has attracted the attention of concerned academics the world over. At the urging of a group of Berkeley faculty members, it has been published in the United States as a 50-cent paperback by San Francisco Press, 255 12th Street, San Francisco, California 94103.

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The Scramble for Census Data

The 1970 census currently being taken will yield, for the first time, massive data which will be issued by the government in a form suitable for processing by machine. The Bureau of the Census plans to issue over 2000 tapes containing far more information than found in any previously published census tables. For example, the sample census counts will contain over 10,000 items of information for each of the 35,000 census tracts in the United States. The purchase of all these tapes would cost about $120,000, and processing them just once on any large third-generation computer would probably cost a third to a half that much.

It is perfectly clear that to achieve widespread utilization the census should be issued in a more highly condensed and usable format, preferably without any sacrifice of information. A preliminary review suggests that condensations by a factor of 8 to 15 can be achieved immediately. Later in the decade mass storage capabilities will have been greatly improved and expanded, and random or partially random access to files of this size may be commonplace. Also, a number of useful abstractions of the file across all tracts or counties into units of one or two reels of tape can be devised. Finally, there will be many innovations in the utilization of the geographic aspect of the census files and in the combination of census data with data from other sources.

In spite of limited funds, the Census Bureau must satisfy a wide variety of users, and this situation complicates efforts to reorganize the files effectively and efficiently. Most university users and private consultants in this field serve local, state, or regional areas that would use only a small portion of these massive files by providing