the long-term effects of soil-cover destruction and concomitant flooding, are seriously in need of revision in the state of California and other areas; geological opinions and facts are needed to help formulate effective legislation. In short, the geologist should have the ability to see the temporal position of mankind and his fellow organisms in the total environment of the surface of this planet, and he, above all, should advise his fellow men of their role in this evolving, dynamic interplay.

I am pleased to learn that the theme of the AAAS meeting in Washington this year will be conservation. Before that meeting, let us at least try to agree on a definition of that term.

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Flawn has done a service both to geologists and to conservation in pointing out that "geologists are conspicuous by their absence from today's natural-resource planning groups, local, state, and federal . . . [perhaps because] geologists are regarded in government circles as champions of the mineral industry, rather than as conservationists." The same could be said of mining and petroleum engineers, probably because, as Flawn notes, "There is a disturbing aspect of the new conservation movement in that the extractive industries and the mineral industries in particular are regarded as rapacious despoilers and looters of the nation's resources." The use of this vituperative vocabulary to disparage the development of resources by American private enterprise for the use of the American people, and thereby to promote government control, has been going on for a long time. The intention to use the conservation movement to bring about what most dictionaries call socialism was clearly stated in Gifford Pinchot's article "Breaking new ground," published some 40 years after the famous 1908 White House Conference on Conservation (and reprinted as "What it all means" in *Readings in Resource Management and Conservation*, I. Burton and R. W. Kates, Eds., Univ. of Chicago Press, 1965). Pinchot said: "Conservation is the application of common sense to the common problems for the common good. Since its objective is the *ownership, control, development, processing, distribution, and use* [emphasis mine] of natural resources for the benefit of the people, it is by its very nature the antithesis of monopoly." Many sound and sincere conservationists, including geologists and engineers, want no part of the scheme to use the conservation movement to socialize natural resources.

Geologists and engineers have done a spectacularly effective job, without publicity in conservation literature. It is no coincidence that there have been adequate oil and other mineral supplies for the 20th-century wars and for the maintenance of the economy in the meanwhile. It has been due to the operation of the scientific, engineering, executive, and technological talents and skills of the most capable discovery and development personnel in the world —almost all in private industry. Transfer of access to undiscovered mineral resources from this capable body to "resource managers" or government agencies by wholesale segregation of land under the mining and leasing laws could be a national catastrophe.

The Multiple Use Act (Public Law 88-607, 19 Sept. 1964) might be interpreted to do just that. Parts of section 1 provide for the Secretary of the Interior to determine which lands "shall be retained . . . in Federal ownership and managed for . . . mineral production." Section 4 provides that classification for retention "shall have the effect of segregating such land from . . . disposal under . . . the mining and mineral leasing laws. . . ." The Multiple Use Act is temporary, enacted "pending the implementation of recommendations to be made by the Public Land Law Review Commission." Flawn's alert regarding the absence of mineral exploration and development experts from high conservation councils is most timely. The portents of government management are indeed ominous. Geologists, engineers, and everybody else, including the Public Land Law Review Commission, need to be aware of this potential for nullifying the most successful land policy in all history.

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Linear Algebra: Teacher's Problem

I am a physicist with the usual sort of background in mathematics and am teaching mathematics to high school students. It has been my observation

that to many high school and beginning college students, too intelligent to be ignored, "pure mathematics is to applied mathematics as crossword puzzles are to literature." These potential users of mathematics need to see mathematics work, in order to appreciate it and be excited by it.

In group theory and in linear algebra, which are now beginning to come into high school math, and particularly in the teaching of matrices, I have been able to find very few significant applications which do not require extensive training in other disciplines in order to be understood. One tells the student that matrices, for example, are indispensible in many fields in order to avoid a quagmire of symbols. Can this be demonstrated in applications that are reasonably easy to understand?

I should be grateful for suggestions in whatever field of application, showing the significance and use of change of basis, matrices, linear transformations, and group theory. Details, please.

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AAAS Election System

The news (18 Feb., p. 843) that the Council of AAAS defeated a constitutional amendment which would have given all Fellows the privilege of electing officers of the association will surely be greeted by many with surprise and disappointment. It has sometimes been claimed that the association is a democratic organization, but terms must be carefully scrutinized when it is realized that the members of the council, who now retain all elective power in addition to their legislative power, are usually appointed.

It is a remarkable feature of the contemporary scene that in a country whose institutions offer many notable examples of democracy, the one scientific organization which seemingly has the potentiality of becoming an authentic representative of American science, by the criterion of popular election by a qualified constituency, chooses to reject that opportunity. If we knew the reasons for this action, we might have significant clues to the contemporary scientist's approach to the problems of power and responsibility.

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