selection of government-sponsored research, but I would like to argue in favor of an approach which contains features of both freedom and control in such a way as to permit the productive scientist an opportunity to prove the administrator wrong in his value judgments.

RICHARD I. ROSSBACHER
Box 78, 822 Boughter Road, Dahlgren, Virginia 22448

Travel Funds, Biochemists' Meeting

It has recently come to my attention through several inquiries that some confusion exists regarding support for attendance at the Sixth International Congress of Biochemistry by grantees of the U.S. Public Health Service. Officials of the Public Health Service have informed me that costs for attending this international congress in New York City, 26 July to 1 August 1964, are permissible charges under domestic grants in exactly the same manner as would apply to attendance at an ordinary scientific meeting in the United States.

The limitations on international travel under PHS grant regulations apply to meetings held outside the United States. PHS grants which include funds for attendance at this scientific meeting or similar meetings not otherwise limited may support appropriate costs of attendance at this congress.

ROBERT A. HARTE
Office of the Secretariat, Sixth International Congress of Biochemistry, 9650 Wisconsin Avenue, NW, Washington, D.C. 20014

Teaching Science in Turkey

I am teaching sociology this year in the Universities of Istanbul and Ankara and intend to prepare a couple of my books in sociology for translation into Turkish. I have 1500 students, of whom those at Ankara are sophomores in the faculty of political science and those at Istanbul are from all classes in the faculties of economics and letters. In the course of my lectures, which concentrate almost entirely upon social change and the dynamic aspects of sociology, I referred to the subject of carbon-14 dating. To my surprise, none of my students or my assistants (Ph.D.'s) had heard of it before.

Since I am not well versed in physics, I had to find some explanation of carbon-14 dating that I could understand myself and could use to answer the students' requests for further information. One book dealing with the subject was listed in the American library at Istanbul, but it had been stolen. I found a copy of it in the similar library at Ankara and discovered that it was good up to 1960. But work in this field moves very fast. Even if the 1960 book had been translated into Turkish and had been a best seller, it would have been outdated by the time I needed it. I had some 1963 and 1964 issues of *Science* and searched through all of them, even the advertisements and the letters, and put together what I could to explain unstable isotopes and carbon-14 dating methods. I had to repeat the resulting lecture (during which I showed an advertisement for an electron microscope) seven times to different classes.

The archeological museum at Ankara uses carbon-14 measurements and dating and has a newer book about it. These two books and one or two informed persons constitute all the sources of information on the subject I could find in Turkey. Yet this country is trying to teach science in Turkish. I think a more radical solution is needed. I do not believe the sustained volume of literature necessary to make modern science intelligible and usable can be supported in the Turkish language. Should not all graduate education in a country such as this be done in English?

CARLE C. ZIMMERMAN
Faculty of Economics and Sociology, University of Istanbul, Turkey

Effective Legislation

In the editorial "Devil's advocates" (28 June 1963, p. 1365) a sane pragmatic approach is adopted to the immediate problem of making available to Congress effective advice in those enlarging areas of legislative action in which extensive technological and scientific capabilities and judgments are involved. The formation of special groups of able scientists, charged with the responsibility of digesting all the pertinent facts and then giving concise advice, is already becoming essential to effective legislation in the Western democracies.

To enforce this argument, however, the editorial points out that some eminent scientists would make poor legislators (some of them currently make bad scientific administrators, too!)—but it leaves the impression that the status quo should be preserved, the seats in Congress or Parliament being largely occupied by men with business, legal, or trade union backgrounds. From a political rather than a budgetary viewpoint it seems to me even more important to devise realistic means for gradually changing the composition of legislative bodies than to improve their present scientific judgments.

This can be illustrated, within limits, by analogy with many large companies operating within certain established industries, such as railroading and steelmaking. Such companies have been compelled by the pace of technological progress to provide their managements with highly competent advisers and consultants. In addition, in such industries it is becoming essential for the active board of management to include a substantial proportion of men whose natural bent and formal education lies, not in the arts, commerce, industrial management, or law—although they must have a flair for, and adequate training in, management—but in engineering, science, and technology. Management without such men stomps through the 1960's on a wooden leg. They do not, of course, replace the active engineers as consultants on specific technical problems, but the management of modern industries must embrace a wide spectrum of the intuitions, background interests, and mental habits which underlie "rational" decision and policies.

It is even more important that the members of our legislative bodies should, in time, represent a balance of the interests and achievements of current society. This is true irrespective of the present power of particular political machines or of graft in specific local wards. The necessary social upheavals in Britain during this century owe an immeasurable debt to those members of Parliament who not only had great political gifts but also had their mental roots firmly in the worker's world. These men were able to launch out into politics through the trade unions, and then to keep in touch at the "grass roots" level by virtue of their background. If they failed to become established in political life they could return to effective roles within their trade union organizations.

Within Western countries it is almost impossible at present for a young man with legitimate political aspirations to

risk the initial uncertainties of standing for election unless he can do this from the relative security of a legal partnership, business ownership, considerable private means, or a position of leadership in a trade union. By default, our societies are firmly eliminating from potential political leadership an increasing proportion of their most intelligent and able men, because more and more men of the highest caliber are entering a steadily widening range of professions. Professional men in their thirties with family responsibilities, who are on salaries and lack private means, cannot campaign for Congress. In the smaller Western countries, or in times of recession, they cannot readily find suitable professional re-employment if they fail to gain re-election after their first term. This growing group is finding that, while their representatives may not be hostile to their interests, they seldom show intuitive understanding or deep insight into their world. The professional community is educated, aware, and articulate, but Congress and Parliament contain all too few men who readily comprehend this critical group in our dynamic modern society.

By the same token the very best advice of your "devil's advocates" will not be fully effective unless Congress includes enough men with the appropriate background and political savvy to be at once enthusiastic in their vision and cautious in their skepticism concerning proposed legislation in technological areas.

It is becoming urgent to devise conditions under which a reasonable proportion of young professional men with a developed political bent may campaign for election within the present party framework. Public life is notoriously insecure, but the established representative learns to live with this and to slowly build legitimate backstops against his potential failure to achieve re-election. It is the new candidate or the novice congressman who is most clearly "out on a limb." The principal employers of graduates (government, universities, and contract research industries) should seriously consider various schemes to guarantee such a candidate suitable re-employment, at least up to the point where he has been elected to a second term. The number of people involved from any one organization would be minute, and the man being reinstated after one term in Congress might well have grown considerably in overall stature. Beyond the second successful election, the fledgling representative should be achieving political maturity and should be prepared to face the same future uncertainties as his colleagues in Congress.

There remains the harder task of persuading many local and state conventions to choose sane, honest, well-equipped men as candidates, rather than free-wheeling demagogues with a gift of gab, or of graft. This is a very real problem, and one which is scarcely being discussed at present. Alternatively, the election process is considered (as in your editorial) to be a distinctly dubious means of providing Congress with adequate advice in technological areas. Here we have a dangerous confusion of two equally important but quite different issues. The one is concerned with specific judgments now exercised by Congress, particularly in matters of budget control. The other is concerned with the range of intrinsic qualities and mental outlook among the individuals who will in fact be able to offer themselves as candidates for election to responsible public office in the years ahead.

E. W. RADOSLOVICH
Commonwealth Scientific and Industrial Research Organisation, Adelaide, South Australia

Disclaimer

The letter by Carleton Putnam (13 Dec. 1963, p. 1419) has already evoked able and thoughtful replies (24 Jan. 1964, p. 306). My attention has been called, however, to a statement in his letter which incorrectly describes the position of the "authorities" listed on pages iv–vii of the George report ("The Biology of the Race Problem," prepared by commission of the Governor of Alabama, 1962). Putman writes, "*The Biology of the Race Problem* is almost entirely a collection of the views of scientists other than George, views which have been published again and again in scientific books or journals." On the contrary, George's book consists of *quotations* and *abstracts* from published works and *views* which are George's and not necessarily those of the original writers.

The use of a list of "authorities" in a sociopolitical polemic raises a nice point of scientific propriety. The authors cited are not, to my knowledge, misquoted, and the material abstracted is in the open literature. George has a right to use these quotations and even to interpret them in a manner uncongenial to the original authors. The racial problem is not unique in having the same data interpreted differently by different individuals. The prominent display of the list, however, tends to mislead readers as to the extent of the scientific support for George's conclusions regarding racial differences and their application to the school segregation problem. Putnam's letter strengthens the possibility of misunderstanding, since it does not contain George's disclaimer (p. vii), "I do not ascribe any particular opinion to any of these people regarding the school integration problem; but as to the specific points on which they are cited, their testimony is authoritative." Unfortunately, only those who know the "authorities" personally will be able to guess at their actual social and ethical convictions. As one of the cited "authorities," I should like to dissociate myself from the implication that I share George's views on the desirability of racial segregation.

JOHN L. FULLER
Jackson Laboratory, Bar Harbor, Maine

. . . George stated the scientific facts and then drew his conclusion. His opponents have consistently questioned this conclusion and put forward their own conclusions without disproving George's facts or producing any contradictory facts of their own. Yet they have managed to leave with the newspapers and the public the impression that they have refuted the evidence itself. Witness the headlines in the New York *Times* [1 Nov. 1963]: "Scientists Rebut Theories. . . . Say There is No Evidence to Support Any Hypothesis of Inherent [Racial] Differences." Such headlines, never disclaimed, do more than "tend" to mislead.

CARLETON PUTNAM
4415 Kirby Road, McLean, Virginia

Rhythm and Natural Selection

G. Hardin's letter, "Ultimate failure of rhythm" (6 Mar., p. 995), points out very well that if time of ovulation is genetically controlled the use of the rhythm method of avoiding conception would lead to selection for genes causing irregular ovulation. He concludes, "In the long run, the 'natural' method, no matter how perfected, will be frustrated by natural selection." However, several factors which would make se-