OSTP: The Last 4 Years

An article entitled "Frank Press's number game" (News and Comment, 24 Oct., p. 406), suggests that Frank Press and his staff at the Office of Science and Technology Policy (OSTP) may have distorted budget data in order to overstate President Carter's record in support of basic research. Fairness requires me to clarify the record about the data on the Administration's support for basic research and Press's testimony before my subcommittee on 19 September.

Subsequent to the hearing, information was provided to the subcommittee by the OSTP which confirmed that the growth of support for basic research in constant 1972 dollars between fiscal years 1979 and 1981 (March) was slight, as was also reported in Willis Shapley's analysis for the AAAS. Press's testimony indicated, however, that the Carter Administration's 4-year record, that is, for fiscal years 1978–1982, would exhibit real growth in basic research of 11 percent. From the information I now have, it appears this increase depends largely on the new funding for fiscal years 1981 and 1982 promised in the President's August 1980 economic message.

I don't question Press's good faith, nor the intentions of the Carter Administration. But the record of support for basic research in 1981 and 1982 will now depend on the Reagan Administration and the new Congress.

The real message of the budget figures is that, while support for basic research was increasing significantly in current dollars under President Carter, the impact of inflation cut away those gains.

The relationship between Press and my subcommittee has been close, cordial, and mutually supportive. Press made the most of a difficult, understaffed assignment and deserves the gratitude of all who attach a high priority to the health of science in the United States.

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The Office of Science and Technology Policy has received some comment in recent letters to the editor (21 Nov., p. 846). I wish to add something on a positive note. During the last 4 years there has been important interaction established by the OSTP with the industrial research community. Furthermore, this interaction was carried out without any adversarial relationship, which sometimes obtains in the interaction between industry and some federal agencies. The interactions were frequent and led to involvement of many industrial researchers in activities such as the Domestic Policy Review on Technological Innovation. We in the industrial R & D community feel that our voice has been heard and that we have made a contribution. We do not represent a single narrow interest, but a broad spectrum of industrial science and technology important to the economy of the United States.

We trust that this relationship may continue with the incoming presidential science adviser.

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Chestnut Blight

American plant pathologists who are seeking a control for chestnut blight (Research News, 22 Aug., p. 892) must objectively examine two aspects of the French literature on hypovirulence (*1*, *2*). Foremost are the subjective statements by Grente and Berthelay-Sauret (*1*) that there is a direct relationship between the relative recovery of blight cankers on European chestnuts in Italy and the relative abundance of strains of the fungus with infectious hypovirulence. These statements are the basis for the hypothesis that an infectious hypovirulence agent is the mechanism for biological control of chestnut blight in Europe. If this direct relationship exists, objective experimental data should be presented to confirm it.

A second problem is the absence of experimental data in reports (*2*) of the successful control of the blight on European chestnuts in French orchards. To confirm that a control treatment is effective, the treatment must be compared with suitable check treatments. The French reports do not indicate any such comparisons were made. In the absence of check treatments, there is no basis for establishing the relative effectiveness of a control treatment.

Infectious hypovirulence in a plant parasitic fungus is not unique to the chestnut blight fungus *Endothia parasitica*. Lindberg (*3*) reported hypovirulence in *Helminthosporium sativum* in 1959. Recently it was reported in *Rhizoctonia solani* and *Gaumanomyces graminis* (*4*). Although these authors have speculated that hypovirulence may provide biological control, they have not

demonstrated it. The U.S. Forest Service is supporting research to critically evaluate the potential of hypovirulence in *Endothia parasitica* for biocontrol in the United States. This research may or may not confirm the interesting hypothesis of Grente and Berthelay-Sauret, but it should give us a sound basis for that determination.

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Paleontologists and Continental Drift

However alluring the image may be of a bunch of mossback paleontologists being dragged kicking and screaming into acceptance of continental drift by those clever geophysicists, it represents a simplified piece of revisionist history (Research News, 31 Oct., p. 514).

Before Wegener, the father of continental drift theory, paleontologists and biogeographers were faced with a difficult problem in explaining in terms of Darwinian evolution the demonstrably close affinities of living and certain fossil biotas on widely separated continental areas, especially in the Southern Hemisphere. In his classic work *The Origin of Continents and Oceans*, Wegener writes that he only took seriously implications for the coastline fit of South America and Africa after examining paleontological evidence for a former land bridge between the two continents. Paleontological and biogeographic data make up a major portion of the arguments that Wegener marshaled in favor of continental drift, even to the timing and rough sequencing of separation events. His proposal of continental displacements, rather than of the transoceanic land bridges seemingly required by organisms, represented a major simplification of the perplexing evidence of vertebrate paleontology, paleobotany, and biogeography. The villains of this piece turned out to be the geophysicists, who disposed of his theory on grounds of crustal rigidity and the lack of a sufficient motive force.

In the case of the asteroid theory of extinctions, what some paleontologists, including myself, are objecting to is not the possibility of an extraterrestrial impact but to some of the more extreme flash-frying, mass-gassing (*1*), or lights-out (*2*) scenarios attributed to it.

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References and Notes

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Communicating Scientific Data

Philip H. Abelson, in a recent editorial (17 Oct., p.255), raises a number of complex issues for both scientists and those who are engaged in the design and planning of the information systems for the future.

As a "data base supplier," BioSciences Information Service, generally known to the scientific community as the publisher of *Biological Abstracts*, has worked actively on the integration of computers into our abstracting and indexing work since the 1950's. As a result, we are now able to provide scientists with "electronic" access to more than 2 million research reports. When it is considered that modern systems have the ability to select within seconds only the most relevant items from this "memory bank," those of us who have labored in conventional libraries during our student and professional lives can well be astonished. When we add the now commonplace situations that allow these systems to function for hundreds of researchers *simultaneously* and (with allowances for time zones) from all five continents, the power of this new information medium is even more remarkable.

Despite the above, we feel that the future of the scientific journal is not so gloomy. In fact, the printed form of *Biological Abstracts* and our other information publications continue to provide the fundamental revenues that make our electronic communication media possible. In those areas of the world not presently benefiting from the electronic form of distribution, the information must be available in more conventional garb. Further, the refereeing process in connection with conventional publication remains an essential value of the scientific documentation system.

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