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## Pressure on Basic Research

For two decades basic research has been living largely on society's good will; there have been no major miracles. Although research has made significant advances that in sum have more than justified its support, few of its spokesmen have bothered to do a good job of showing that basic research is currently paying off. Results of this lack of diligence are now evident.

There have been significant changes in the government's attitude toward basic research. President Johnson has called on the National Institutes of Health to plan for "specific results in the decline in death and disabilities" from cancer and heart and other diseases. Much basic research has been done in these areas, the President said, but the "time has now come to zero in on the targets." Congressman Daddario is pushing the National Science Foundation toward applied work (*Science*, 24 June). Key spokesmen of other major agencies, such as the Department of Commerce and the Defense Department, have called for greater emphasis on applied work and, by implication, less on basic research.

Two current factors could place added pressure on basic research. One is Medicare, and the other is a shortage of personnel for applied research. Washington fears that there may not be enough doctors available when the new law goes into effect on 1 July. Why not cut back on medical research to meet the crisis? This would make good political eyewash, although it would add barely 1 percent to the nation's supply of practicing physicians. There is an acute shortage of physical scientists to fill jobs in industry. Why not cut funds for support of basic research by the National Science Foundation? Such a move might increase the applied research manpower pool by as much as 1 percent.

At a time when those who understand the value of basic research should be united, such unity does not exist. Outside the university one finds considerable antipathy toward the academic establishment. Within it, professors have looked down on nonuniversity research, have regarded its practitioners as inferiors, and have attempted to curtail their activities. Most university science graduates must eventually find employment in nonacademic posts. When they do they accept for themselves what they have been taught is a second-class status. As a result they can have deep loyalty neither to their alma mater nor to their employer.

These campus attitudes are unrealistic and destructive. Important research is being done in industry, in government laboratories, and elsewhere. In many areas of physical science, work at industrial laboratories is unsurpassed. In many aspects of biomedical investigation, work at the National Institutes of Health is in the forefront. Similar statements could be made about other governmental and nonprofit research establishments and the national laboratories.

In the present situation major blunders could be made, weakening the entire fabric of science, medicine, and technology. In downgrading basic research, the government could repeat the unhappy experience of the petroleum industry. In 1958 many geologists were dismissed in an economy move. In the next few years, enrollment in geology departments dropped to a small fraction of its former level. Today, the industry wishes to employ far more graduates than are available or will be forthcoming in the next several years.

Attitudes toward basic research are in transition. Industry, currently aloof, could find its vital interests severely damaged while it sat watching. The academic community has some fence-mending to do and should get about doing it.—PHILIP H. ABELSON

# Science

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Philip H. Abelson

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