

ventures." The group formally recommended an interdepartmental review of the contracting practices of agencies such as DOD, NASA, AEC, and NIH, "to ensure that these policies are conducive to the long-range growth of small enterprises." The panel also said that small companies are hampered because they have no official governmental spokesman in Washington, and it urged the Commerce Department to assume that role.

No Major Legal Changes

Since there is adequate venture capital in the United States, the panel concluded, there is no need for a federally supported program to provide such capital. It also rejected the commonly made proposal of a 75 percent tax credit for all R & D expenditure, and expressed its skepticism that any tax incentive for R & D alone would automatically lead to major increases in innovation. In short, the group concluded that there was "no need to recommend any major changes in the present laws" governing the three major factors affecting invention and innovation—taxation, finance, and competition. The panel did not go so far as to suggest a proposal which some technologically minded observers have recommended—that the federal government help new companies bear some of their financial losses during their first precarious years.

Recommendations for Federal Action

The panel did not propose radical new federal departures in promoting technological change, but it did make 17 specific recommendations for federal action. Most of these were concerned with taxation or with the administration of the antitrust laws. The panel's recommendations included: a White House conference on technological innovation, followed by a series of regional conferences on the subject; a 10-year tax "carry forward," against profits, of the losses of small technologically based companies; an improvement of the stock option to allow new firms to attract management personnel more readily; amendment of the Internal Revenue Code to permit a casual inventor to deduct out-of-pocket expenses legitimately incurred for the purpose of ultimately producing income; and the taking into account of the effect of innovation, as well as competition, in the administration and interpretation of current antitrust laws.

Although the panel's specific recom-

mendations are of interest, the main thrust of the report is educational—both in providing ideas about the process of innovation and in stressing the need for much more intensive study of the subject. Daniel V. De Simone, who served as executive secretary for the group, indicated that the study had been a highly informative foray into a largely uncharted area for the members of the panel. One factor which impressed the group, De Simone said, was the importance of social innovation. "If we speak only in terms of technological change, without considering the social factors, we're just going around with horse blinkers," he said.

Hollomon's Reaction

The panel recently presented its report to the Commerce Technical Advisory Board and to Hollomon. (On 1 February, President Johnson gave the energetic Hollomon the additional job of Acting Under Secretary, the second highest position in the Commerce Department.) "It's a first-rate report," Hollomon said. "It illuminates a phenomenon that few people understand." He agreed with the panel's downplaying of the importance of R & D in promoting technological change, "R & D by itself doesn't do anything, it's sterile without the innovator and the entrepreneur." Hollomon said that he plans to distribute the report widely through Federal agencies and hopes that it is carefully read. He said that the recommendations will be considered by the concerned agencies, and indicated that he thought that a national conference on technological innovation would be held, although probably under the auspices of the Secretary of Commerce rather than the White House, in contrast to the recommendation of the panel.

Although it will still probably be difficult to focus adequate attention on civilian technology problems, the panel's report on technological innovation is likely to provoke considerable discussion in coming months.

—BRYCE NELSON

Appointments

Arnold B. Arons, research physicist and undergraduate science teacher at Amherst College, to president of the American Association of Physics Teachers; **Stanley S. Ballard**, head of the department of physics at the University of Florida, to president-elect of

the Association. . . . **Peter A. Franken**, physicist at the University of Michigan, to deputy director of the Advanced Research Projects Agency of the Department of Defense, succeeding **Robert Frosch**, who has been appointed assistant secretary of the Navy for research and development. . . . **Nolan Estes**, deputy associate commissioner for elementary and secondary education, to associate commissioner and head of the Bureau of Elementary and Secondary Education. . . . **James M. Stengle**, special assistant to the associate director for extramural programs, National Heart Institute, to chief of the national blood resource program. . . . **Jack A. Hunter**, assistant director for engineering and development, Office of Saline Water, to director of the Office succeeding **Frank C. Di Luzio**, who was appointed assistant secretary of the Interior for Water Pollution Control. . . . **Robert B. Abel**, assistant research coordinator, Office of Naval Research, and executive secretary of the Interagency Committee on Oceanography, to head the National Science Foundation's program to implement the National Sea Grant College and Program Act of 1966. . . . **William D. Mayer**, associate dean of the School of Medicine, University of Missouri, to dean of the school and director of the Medical Center; **Vernon E. Wilson**, now dean and director of the school, to executive director for health affairs. . . . **William D. Toussaint**, professor of economics, North Carolina State University, to head of the department of economics, the Institute of Agricultural Policy, the Center for Economic Studies and extension and research programs in economics at the University. He will succeed **C. E. Bishop**, who has become vice-president of the consolidated University of North Carolina.

A Correction

The first of two articles on chemical and biological warfare (Chemical and Biological Warfare (I): The Research Program, *Science*, 13 January 1967) incorrectly stated that the Illinois Institute of Technology is among institutions conducting research on CBW. IIT is conducting no work on CBW and does not engage in classified research. The work in question is being performed at the Illinois Institute of Technology Research Institute, a separate organization affiliated administratively with IIT.