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The Changing Job Market

Recently, *Science* had an opening for a proofreader. Among the applicants was a Ph.D. in physics, who had been engaged in space research. Our interviewer, feeling that the applicant was overqualified, named a low salary. The physicist still wished to be considered; he said, "That would feed me." Further examples of an anecdotal kind are easily obtainable. They lead to the impression that scientists are experiencing unusual difficulty in finding positions commensurate with their training.

Detailed, up-to-date quantitative evidence on the job market for scientists is scarce. One of the best recent studies was conducted by Mrs. Susanne Ellis* for the American Institute of Physics (AIP). She examined the placement of new Ph.D. physicists during the past 3 years. The study confirmed that applicants are working harder to find jobs. In 1969, 52 percent of candidates sent applications to ten or more potential industrial employers. This figure was up from 29 percent in 1967. At the same time, the number of applicants whose efforts produced no offers rose sharply. The survey revealed that 2.5 percent of the recent doctorate holders are unemployed. But that percentage is deceptively low because, of the 1969 physics Ph.D. graduates, 46 percent have accepted temporary postdoctoral appointments. This figure is up from 6 percent in 1959 and 25 percent in 1967. Most of these temporary appointments were created by the chairmen of physics departments for their own Ph.D. graduates.

The dark picture for physicists has its origins mainly in changes on the academic scene. During the period of exponential growth of federal support, the number of positions available on university staffs increased in spite of a lack of growth in the number of physics undergraduates. This increase in faculties absorbed most of the new Ph.D.'s. When federal support leveled off, physics departments could not justify additional appointments to their staff. Industry and government, which together had been employing about 30 percent of the new Ph.D.'s, could not absorb the surplus. The kind of training that physicists have experienced is partly to blame. The AIP survey reported that nonuniversity employers found that physicists were overspecialized and less adaptable than engineers. Engineers have been obtaining an extensive physics education as part of their engineering training and are now taking positions that formerly went exclusively to physicists.

In part, the employment problems of physicists represent a crisis of expectations. The AIP survey asked recent doctorate holders to name their desired employer. As many as 57 percent named universities (where there are few job openings), whereas only 4 percent named government and almost none named 2-year colleges. The 2-year colleges employ only 1 percent of new Ph.D.'s and could use many more.

An article to be published in *Science*† sets forth results of a survey of many fields conducted by the National Research Council. The survey confirms the finding that most new Ph.D.'s must work harder to find jobs, but differs from the AIP study in its assessment of the extent of unemployment among new Ph.D.'s. The Council report is much more cheerful.

Faced with the possibility of an excess of scientists, the Nixon administration, in its 1971 budget, proposes to cut in half the number of new fellowships and traineeships (*Science*, 1 May). Earlier years have already seen severe pruning of such support. The proposed cuts will have repercussions extending to the high schools, and the full effects will endure for decades. Blinded by the prospects of short-term maladjustments, the administration seems about to stumble into long-term destruction.—PHILIP H. ABELSON

* Susanne D. Ellis, speech presented at the Amercian Physical Society Meeting, Washington, D.C., 28 April 1970. † Office of Scientific Personnel, National Research Council, "Employment status of recent doctorate recipients," *Science*, in press.