

tutes is not so clear. If an institute is limited to studies of a very specific sort, progress may remove its *raison d'être*; if an institute is large and broadly based, it can by shifts in emphasis develop with time. However, there is grave danger in the larger institutes that the individual interest of staff members will stray to alien areas and that the effort of the institute will ultimately become so diffuse as to lose significance. Consequently, to remain healthy, institutes must continually review their aims and reassess their staffs, lest they degenerate into incongruous academic appendages. Reorganization from time to time, particularly among the senior staff, may be desirable in some cases.

If we conclude then that both departments and institutes should exist, how can each be economically staffed? The device normally employed is the joint appointment; i.e., academic staff members join in institutes in order to benefit from the research opportunities which they offer, but at the same time retain their affiliation in the departments for the purposes of formal education. This device, to be sure, leads to certain difficulties in practical operation. For instance, the over-all requirements of an institute sometimes are at variance with the over-all requirements of a department. High academic standards and a spirit of cooperation reduce friction on this score to a minimum. Again, participation in an institute—particularly a large one—often demands a somewhat lighter teaching schedule. The lightening of teaching schedules in this case should be uniform so that all the individuals in a department have an equal opportunity to perform both research and teaching. By and large, good research men like to teach and are as anxious to participate in departmental activities as in institute activities.

A number of our large universities have already adopted the institute approach. Just after World War II a fair number of new institutes was created. It is per-

haps too early to say just what the long-term effect of these institutes on American education will be. It is already apparent, however, that their influence on the scientific scene is appreciable and growing. It is also apparent that new and diverse institutes should be created. Each university cannot (and should not) expect to have an institute in every possible field of inter-departmental collaboration. Rather, they should seek to support relatively few but really good institutes in those areas most appropriate for the particular university in question. Quality in science has always been more effective than quantity. Many parts of the over-all job should be left for other universities.

In this connection we would like to emphasize the great possibilities inherent in the institute approach for our smaller colleges and universities. An institute does not have to be big—it can, in principle, involve only three or four people, calling itself perhaps by the more appropriate name of committee. Certainly groups on this scale are not beyond the realm of possibility for any healthy college and could play an increasingly important role on the scientific scene.

The best approach to the formation of an institute is the spontaneous desire of a group of people to pool their intellectual resources. University and college administrators should do all they can to encourage such groups. However, where departmental shackles and jealousies interfere with such spontaneous actions, or where barriers do not exist but the spontaneity is lacking, university administrators would do well to ponder the underlying reasons.

We have confined our remarks above to institutes concerned with physical sciences. These remarks may apply also to other areas of scholarship, where the need for institutes is perhaps even greater.

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## NOTES AND COMMENTS

### Activated Reservist

From various articles which I have read, I have been led to believe that this country faces a shortage of trained personnel in the scientific professions. I believed this to include college graduates along with the doctorates and post doctorates, the general scientist along with the highly specialized. Apparently this is not true for many of us who at present hold only the BS or the BA degrees.

As a veteran of World War II and a member of the Inactive Naval Reserve, I find the fact that I have pursued a course of study leading to a degree in physics, that I have been actively employed in the field for almost two years, and that there are no trained technologists available to replace me at this time of no concern to the Navy. I have recently been recalled to active duty by the Navy where I am expected to serve in my previous capacity as an Aerographer's Mate 3/c.

Even though it has been acquainted with the facts through a request for deferment submitted by my employer, the National Bureau of Standards, the Navy still insists on my returning to active duty. Thus am I not only prevented from making use of my scientific training, but I am also robbed of the opportunity of further education in my chosen profession.

Is this great demand for trained scientific personnel someone's pipe dream, or is it real? Are only the PhD's to be considered while the great potential of the rest are lost to the country through the incongruousness of the Armed Services? Certainly my situation is not unique. There must be a great many others whose training is thus being wasted. . . .

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