



There are not enough physicists around for all the jobs they should do. Programs already under serious contemplation for the improvement of education, the expansion of industrial research, and the betterment of technical services in the government will require, within a few years, the addition of perhaps as many as are now employed.

So, as a nation, we decide that more physicists should be trained. But physics is not the only field in which human resources are short. The trend of modern times is toward a greater dependence upon highly trained people with special capacities. The American Institute of Physics, on behalf of physics, is joining with other associations in an investigation of this problem.

Together, we then say, let us strive to find all the good minds in youth, lead their possessors over all the economic and other barriers on the long road of education, and see that not a single person is diverted at any stage to work below his ability. But how close must we come to this ideal, which is both difficult and costly? Perhaps, if we do only a little better than we are now doing there will be enough gain to get us all the Ph.D.'s and suchlike people we need, per year.

Unfortunately the answer seems to be, no! If we can rely on the results of a recent preliminary study, *the best we can do will be only to about double the output!* We can make two blades of grass grow where one grew before—but not three. If, across the board of education, industry and government, we merely double the use of specialized personnel, we must skim all the cream off the top of the population pail to fill the jobs.

Is this preliminary estimate really true? An investigation is being planned to find out. The Institute will contribute its bit but because the study goes beyond physics it is proper that our part in it should be done through the National Research Council. Then, because it goes beyond the natural sciences, it is good that sponsorship actually lies in the little-publicized Conference Board of the Associated Research Councils, which also brings in the Social Science Research Council, the American Council of Learned Societies, and the American Council on Education.

The conclusions of such an investigation cannot be as flatly simple as the first findings mentioned above. We shall probably find, as we explore the number of people in each bracket of mental aptitude, that the higher we go the greater is the fraction that manage to acquire advanced training. Therefore our unexploited reserves are the more limited.

Let us admit the difficulties. We have no good yardstick to measure capacity for professional intellectual work—much less an early budding aptitude for it. Psychometrics is in its infancy. Then too, we cannot arrogate to scholarly fields all of the need for the intellectually pre-eminent. Business management, practical politics, and hundreds of other vocations need men of intellectual capacity.

Another practical difficulty is that an investigation of the most complex portion of so complex a commodity as human resources must be expensive if it is done well enough to be worth while. It really should not be too difficult to find the funds. In a time of national emergency this country would think nothing of spending a million dollars to survey, develop, and conserve a short commodity like natural rubber or tin. Highly trained and able human resources, viewed as a commodity, are far more important. And an enormously valuable by-product of such an investigation would be an improvement in methods of measuring achievement and aptitude.

In spite of difficulties, it is certain that many statistically valid conclusions can be drawn. If these come to be generally shared by the American public we may hope for more attention to good students in elementary and high schools, and more scholarships and fellowships at all levels. We may even expect more public appreciation of competent professional services and better material rewards for professional men in relation to other vocations.

In the present era of national insecurity, public awareness of the situation would have helped lead to better plans for defense training than those now in operation. Other kinds of training for defense would have been given more appropriate weight as compared with military training. The present Selective Service Act would not have been defective in this respect or, in its place, the Congress might have adopted a more general act to make it certain that an appropriate number of young men and women would be trained in every field vital to national security.

HENRY A. BARTON