SPECIALIZATION AND COOPERATION
IN SCIENTIFIC RESEARCH

The three great functions of a university are to train young people in the art of living, to guide them in the search for truth and actually to engage in the pursuit of truth. The first two of these are universally agreed upon and endorsed, but not so universal and whole-hearted is the recognition of the third—the research function of an institution of higher learning. In some quarters the research aspirations of a university meet with distinct disapproval as encroaching upon the supposedly more serious business of the institution. In other quarters they are viewed with grudging or amused tolerance as harmless little idiosyncrasies in which scholarly men must be indulged in order to keep them contented and out of mischief. In the more enlightened quarters, however, it is realized that a university can not best perform any of its functions or measure up to its opportunities unless full and ungrudging support is given to its attempts to advance human knowledge.

In such a gathering as this I need make no defense of research as a valuable and legitimate activity of a university. It may not be out of place, however, briefly to review some of the considerations which are involved. These naturally fall under three heads, of which the first is

I. Advantage to the student. If ability to think clearly and independently, to organize all his available mental resources, to direct his best efforts for the purpose of solving problems and meeting difficult situations is a thing worth gaining, then research is an important part of a student's training. For the carrying on of research and its success depend on the degree to which these qualities of the mind can be focused on the problem. And what qualities of the mind are more important to develop than these? They can not be developed by that woefully overdone method of teaching by the easier process of fact-cramming. To learn a thing one must do it. To develop these mental traits they must be exercised. And the exercise of these mental traits, focused on some problem, is research.

Another advantage of research to the student is to be found in its stimulation of his interest. Nowadays people are not interested in things static, they...
Science 66 (1715), x-462.