

In order that these facts may be properly interpreted we should know how many Americans are studying in foreign universities. The records show that in 1835 there were 4 American students in the philosophical faculties of German universities; in 1860 there were 77; in 1880, 173; in 1891, 446; in 1892, 383; in 1895, 422, and in 1898, 397.

These figures show clearly that the increase in the attendance at American universities is not accounted for by a falling off in attendance at German universities. On the other hand, they do show that for the last ten years at least there has been no increase in the attendance at German universities, but rather a slight decrease.

Six thousand students are, then, today pursuing advanced courses in our American universities, while not longer ago than 1875 the number was only about 400. In this connection it must further be borne in mind that during this period the colleges have not relaxed in their requirements. The tendency has been in the opposite direction. So that it means today more rather than less than it did in 1875 to be a graduate student. That there is an increasing demand for university work is clear, and it seems to be destined to play a more and more important part in the development of our educational methods.

Now, what is the cause of the rapid increase in the demand for university work, or the rapid increase in the attendance upon university courses? No simple answer would be correct. Probably the principal direct cause is the increased demand on the part of the colleges, and to some extent of the high schools, for teachers who have had university training. The degree of Doctor of Philosophy being the outward and visible sign of such training, many colleges have virtually taken the ground that none but Ph. D.'s need apply. This would, of course, tend directly to increase the attendance at the universities. Operating in the same way is the multiplication of chairs in the colleges. While not long ago one man often taught a number of subjects, sometimes related, sometimes not, the college authorities are coming more and more to entrust a single subject to a single man. The old-fashioned professor who could teach any subject in the curriculum with equal success is a thing of the past except in a few remote regions. The university-trained man has largely taken his place, and the universities are spreading their influence into the nooks and corners of the country through these men.

I need not discuss this phase of the subject further. It will, I am sure, be acknowledged without argument that it is desirable that our college faculties should be made up of men who have enjoyed the best educational advantages. In supplying such men the universities are doing a work of the highest value for the country. If nothing else were accomplished by our universities they would be worthy of all the support they get. The results of their work in this direction are not as tangible as that of the work of the col-

leges, for the latter reach much larger numbers and in ways that can be more easily followed. But, if we keep in mind the fact that the college is dependent upon the university for its faculty and that the character of the college is in turn dependent upon the character of its faculty, it will be seen that whatever good may come from the college is to be traced directly to work done by the universities. In order to keep our colleges up to a high standard it is absolutely necessary that our universities should be maintained on a high plane. This university work is not something apart, independent of other kinds of educational work. It is a necessary part of the system. It affects not only our colleges, but our schools of all grades, and must, therefore, have a profound influence upon the intellectual condition of the whole country. It is difficult, perhaps, to prove this, but it seems to me that the statements just made are almost self-evident truths.

But the universities are also doing another kind of work of importance to the country. Through their specially prepared men they are doing something to enlarge the bounds of knowledge. To be sure, such work is also being done to some extent in our colleges and elsewhere, but the true home of the investigator is the university. This work of investigation is as important as the work of training men. What does it mean? All persons with healthy minds appear to agree that the world is advancing and improving. We see evidences of this on every side. Those results that appeal most strongly to most of us are, perhaps, the practical discoveries that contribute so much to the health and comfort of mankind. These are so familiar that they need not be recounted here. If great advances are being made in the field of electricity, in the field of medicine, in the field of applied chemistry, it is well to remember that the work that lies at the foundation of these advances has been done almost exclusively in the universities. It would be interesting to trace the history of some of these advances. We should find that in nearly every case the beginning can be found in some university workshop where an enthusiastic professor has spent his time prying into the secrets of nature. Rarely does the discoverer reap the tangible reward of his work—that is to say, he does not get rich—but what of it? He has his reward, and it is at least a fair question whether his reward is not higher than any that could be computed in dollars and cents.

The material value to the world of the work carried on in the university laboratories cannot be overestimated. New industries are constantly springing up on the basis of such work. A direct connection has been shown to exist between the industrial condition of a country and the attitude of the country towards university work. It is generally accepted that the principal reason why Germany occupies such a high position in certain branches of industry, especially those founded upon chemistry, is that the universities of Germany have fostered