

The response to this course on the part of the students has been extremely gratifying. In the first years there were some who thought the course was an opportunity for slacking; but a resolution of the faculty that the bibliography course was to be considered in the same light as a laboratory course brought a stop to such notions. In fact, now, most of those taking the course, of their own volition, devote quite a number of spare hours outside of the official library periods in their bibliographical work. Incidentally while rigid quotas are out of the question in a subject like bibliographical work, there is set each year a minimum of abstracts that must be handed in. Some of the work done has been of excellent character, as attested to by specimen abstracts submitted herewith. Particularly noteworthy have been some of the bibliographies prepared on special topics of the students' own choosing. During the past year, for example, one student studied the bibliography of casein plastics; another the production of citric acid from sugar by use of proper cryptogams; while another prepared an excellent summary of attempts to synthesize sucrose.

#### CONCLUSION.

The foregoing indicates that our library is a very busy place and that it yields our college ample dividends in the form of service rendered.

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## THE APPLICATION OF INTELLIGENCE TESTS IN THE COLLEGE OF PHARMACY, UNIVERSITY OF MICHIGAN.

BY WILLIAM JAMES MCGILL.

The use of methods designed to determine the intelligence of an individual by a few short and simple tests has recently been the subject of much discussion. Such methods, variously termed mental tests, psychological tests, or intelligence tests, are now commonly employed in educational and industrial organizations for classifying the individual and determining, in the case of the educational institution, whether or not the student is able to take advantage of the opportunities offered him, and, in the case of the industry, what niche the worker is particularly fitted to occupy.

The indiscriminate and unintelligent application of such tests has been attacked in numerous magazine articles, one in particular having recently appeared in the *Century*. They have also been criticized by many psychologists, who decry the too enthusiastic claims of "intelligence" test advocates, some of whom seem to believe that it is quite possible to determine the resourcefulness and the general reaction of an individual to his surroundings or his opportunities by such methods. But it cannot be denied that these tests do give a certain amount of information, valuable chiefly as a confirmation of more direct observations upon the subject of the test.

All of us interested in teaching have been confronted at one time or another by the necessity, out of fairness to the individual himself, of determining whether a certain student is delinquent in his work because he is lazy, or because his living conditions or other outside influences make it impossible for him to study properly, or whether he is mentally incapable of doing the work required of him. One may be quite sure in which one of these three classes the delinquent student belongs, and yet would welcome additional evidence to support or contradict this opinion.

This is especially true in these days of large enrollments and consequent inability to get into personal touch with the student. It is for the purpose of furnishing this additional evidence that these tests are employed in the College of Pharmacy, of the University of Michigan.

When a student in this college fails to obtain passing grades in a fixed percentage of the total number of hours he has elected for the semester, he is automatically placed on the warned or probation lists, and, among other things, is required to report to the Department of Tests and Measurements of the university, which conducts the intelligence tests. The rating he receives on these tests is reported to the faculty of the college and is kept on record. In case any student fails to improve in his work after having been placed on probation, his case is considered by the faculty and the rating of the student on his intelligence test submitted as a part of his record. Should this rating support a general opinion on the part of the faculty that the student is mentally incapable of carrying on university work, there can be no dispute and the individual is asked to withdraw, as the kindest thing for him personally. If his record on the mental test indicates that he is average or better than average mentally, and this supports the general opinion of the faculty, it remains only to find out whether the student is lazy or is distracted by outside interests. It will be seen that the tests themselves cast more light on this latter point, and may help the disciplinary body to treat each particular case more justly than could otherwise be possible.

The intelligence tests proper are simple. The subject is given a questionnaire which he is to answer and which asks him to record such things as his rooming conditions, outside interests, amusements, preliminary education, and, among other things, his own explanation of his failure to do good work. Another part of the test consists in answering a number of questions on general subjects such as the average college student should be informed upon through outside reading. He is given a paper containing certain statements and requested to perform some definite operation depending upon whether a designated statement is or is not true. He is shown a number of articles and later required to identify them from memory. He is given some reading matter and at the end of a definite period asked to indicate how much of the text he has been able to cover in the allotted time, and later he is asked to outline the subject matter of what he has read. One of the favorite texts for this part of the test has been the treaty of the League of Nations. The rating is usually done on the basis of an average group. That is, the rating obtained by each individual is compared with the ratings which experience has shown would be obtained by each individual of a definite number picked at random. A rating of forty-five on the basis of a group of fifty would mean that the individual obtaining it would be placed sixth from the top in such a group and consequently shows a mentality above normal since the highest possible rating would be only fifty.

Although the usefulness and validity of such methods have been seriously questioned, there is no doubt in the minds of those using them of their value when employed in the manner described—not as a mere mechanical means for classifying whole groups of individuals, but to obtain information not easily gotten otherwise, and which will make possible a fairer treatment of the student who has not been able to keep up with his classmates.