

EDUCATION

# Woman Engineers Needed

Of about 47,500 women who will have received college degrees during the year ending in January, only 43 will have engineering degrees.

► WOMEN having an aptitude for engineering are urgently needed to relieve a growing shortage of male engineers, the American Society of Mechanical Engineers meeting in Rochester was told by Dr. Robert H. Baker, assistant director, and Mrs. O. S. Reimold, placement officer, of the War Industries Training School of the Stevens Institute of Technology, Hoboken, N. J.

But such women are few and generally not interested, and lack the background of physics and mathematics and of shop experience which are essential.

The National Roster of Scientific and Specialized Personnel, Dr. Baker pointed out, shows that approximately 47,500 women will graduate from our colleges and universities from February, 1942, through January, 1943. Of these, only

2,545, 5%, will have majored in some physical science. Mathematics and chemistry each account for about 1000 of them, physics takes 92, and only 43 are graduating with an engineering degree.

But all of the 45,000 majoring in the arts not already placed, estimated at 22,500, Dr. Baker believes, are available for technical training. The background can be supplied by special training to those who have the inclination and aptitude.

Surveys of the interests of college students made by C. A. Fulmer, he cited, showed that in a normal year, engineering ranked 15th with the women among 16 vocational choices. With the boys it ranked third among 17 choices. With the girls, nursing, art, fashion design, home economics, and secretarial work

were the favorites. With the boys, aviation topped all else in popularity, with engineering, law, business and medicine following far behind.

Women were admitted to the Stevens War Training School on February 2, 1942, less than two months after Pearl Harbor. This was the first time that women had ever been admitted to any undergraduate course at the Stevens Institute.

Aptitude, performance and knowledge tests given by Stevens to both men and women revealed that the women score significantly lower than the men in knowledge of physics and in the space sense necessary to engineering. They score only slightly lower in knowledge of mathematics, while in number sense they probably excel men.

Experience at Stevens and psychological tests disclosed also that women excel men in clerical speed, reasoning, estimating, computing and report writing and are their equal in verbal resource. But among those who met the entrance requirements, about five out of ten men possessed suitable aptitudes and interest for engineering training, whereas only one or two out of ten women possessed these qualities.

All this indicates, Dr. Baker declared, that a different training should be provided for women than for men, and different jobs aimed at. Thus, the greatest demand for women is in drafting, for which they are well qualified because of their neatness and accuracy. But they are handicapped by lack of knowledge of shop practice and terminology, which men usually have. This should be supplied by preliminary instruction in the drafting course.

There is no lack of patriotic desire among women to do war work, but they are shy at engineering and must be enticed. Dr. Baker recommended that this begin in the high school, that more girls be induced to study mathematics and physical science. This would not bear fruit for two or three years or more, he said, but in case of a long war would be invaluable.

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A substitute for cork has been developed in Jamaica from the roots of a swamp plant, the "cow apple."

The superiority of present *dyes* protects our soldiers wearing drab or jungle green uniforms; they will not fade to an easily-spotted yellow, as they did in the last war.



**CONVERTED**—Scene in a whiskey distillery now making industrial alcohol. The operator is opening a valve to add yeast to the mash in a fermenting tank. This is an official photograph of the Office of War Information.