

GENERAL SCIENCE

Scientific Manpower

National Science Foundation study comparing numbers of scientists and engineers in the United States with those in Russia shows U. S. now has more than U. S. S. R.

► THE UNITED STATES has more scientists than does the Soviet Union. The gap in numbers is rapidly closing, however, and last year alone the Russians graduated twice the number of science students this country did.

These facts were made public in a report comparing figures of U. S. and Russian scientific personnel prepared by the National Science Foundation.

In its report, the Foundation cautions throughout that comparisons are very hard to make and, if made, they might not stand up because of basic differences in the educational and statistical methods of the two nations.

The report shows that in 1955:

1. There were 1,536,000 graduates in all scientific fields in the United States and 1,158,000 in Russia.

2. Of these, the U. S. had 575,000 engineers and Russia had 535,000 engineers, excluding 51,000 others classified as engineers by the Soviet Union.

3. Science field graduates in the U. S. totaled 59,000, including 22,589 engineers. Russia graduated 126,000 scientists, including 59,000 engineers.

4. The U. S. had 1,360,000 teachers at all levels, and Russia had 1,900,000 at all levels. Of these, the U. S. had 130,000 to 140,000 science and mathematics teachers in high schools and the Russians had 350,000 science and mathematics teachers in secondary schools.

5. The United States had 114,600 Ph.D's in all fields and the Russians had 80,000 to 85,500 "Candidates," which is roughly equivalent to our Ph.D degree.

6. More than 2,721,000 students were enrolled in institutions of higher education in this country as compared to 1,865,000 in the Soviet Union.

"The people represented by the data under discussion," Dr. Alan T. Waterman, director of the Foundation, said, "live in vastly different social, political and economic frameworks. The figures themselves are drawn from different demographic bases. These differences result, not only in different kinds of training in the two countries and in subsequent utilization of trained personnel, but they also result in intangible individual differences that do not lend themselves to comparisons."

Psychologists, for example, are included in the U. S. figures for scientific personnel, but not in the Russian figures. The U. S., it is explained, has many psychologists, whereas the U.S.S.R. has few.

In the U. S. also, the report stresses, graduates in science might not work in their scientific fields. In Russia, however, the

scientist is almost certain to be found employed in his area of study.

The figures for the report were compiled by the Foundation with the help of Nicholas DeWitt of the Russian Research Center at Harvard University.

Science News Letter, August 18, 1956

TECHNOLOGY

Paper-Covered Wood Found to Be Valuable

► LOW-GRADE WOOD covered with resin-impregnated paper can be used for siding, house trim, cabinet partitions and many other uses, tests at the U. S. Forest Products Laboratory, Madison, Wis., show.

The paper cover makes it possible to use cheaper lumber, both by protecting the lumber and by masking defects such as knots, pitch pockets and splits. In addition, tests have shown that the paper glued to pine reduces the lateral swelling 25% to 40%.

When glued to oak, one layer of paper reduced swelling 20%; two layers reduced swelling 35%. The paper also makes it easy to paint coarse and defective boards.

Drawbacks in the use of paper-covered lumber are the possibility that nails might be driven in through a weak spot, and the fact that the lumber cannot be resawed or planed. Because of these factors, its use is expected to be only for finished products.

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AERONAUTICS

British Rockets to Fly at 3,500 MPH

► ROCKETS traveling at 3,500 miles per hour will be fired more than 100 miles into the upper atmosphere from Woomera rocket range next year as part of the joint British-Australian contribution to the International Geophysical Year, which starts July 1, 1957.

The maximum rocket speed will be obtained 30 seconds after launching. By then, the rockets will have reached an altitude of 150,000 feet.

British and Australian scientists are now working out details of the firings in cooperation with the United Kingdom and Australian Supply Departments.

The rockets will contain instruments to record information about the upper atmosphere and cameras to photograph the sun. Information will be recorded about the electrical conditions in the ionosphere, cosmic radiation and temperatures both inside and outside the rockets.

The rockets are being built at the Royal Aircraft Establishment at Farnborough, England, and will carry about 150 pounds of instruments.

The instruments will be placed in the noses of the rockets and will be detached at a predetermined height by an explosive charge. They will be brought down to the ground by parachutes.

Power for the rockets will be provided by motors burning solid fuel, which will be of an experimental type designed for use in the guided missile tests.

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