

GENERAL SCIENCE

Need Sex Desegregation

"Manpower" should perhaps be now referred to as "workpower" and, as such, include more effectively the role of women trained in scientific and technical fields.

By WATSON DAVIS

Statement for the First International Conference of Women Engineers and Scientists, New York, June 20

► **WOMEN ARE PEOPLE.** In these times when there is a great deal of discussion about integration of the races, the recognition that in many activities sex has no bearing should be more widely recognized. We need sex desegregation.

Women have always done a great deal of the work of the world but in earlier epochs it has been largely domestic or unskilled. Now there is higher education and technical training for women. There is increasing willingness of industry to recognize that leave and time off for child bearing is a useful and economical procedure. This makes it possible for women to undertake professional work, not competitively but cooperatively, with men during a good portion of their effective adult lives.

The scientific manpower of the world could be increased by thousands of scientists and engineers.

Womanpower should be included more effectively in the term "manpower." Perhaps we should refer to "workpower."

Intelligent and highly trained women should be encouraged to work part-time, both before and after raising families.

The Russians have made greater use of women in science, medicine and technology than the U.S. More than 76% of Russian doctors are women, contrasted with about six percent in the U.S.

But the U.S. is far ahead of many countries in utilizing the skills and intelligence of the fair sex. In a nation like Japan, the scientific professions include very few women.

In the U.S., educational opportunities are equal for both girls and boys. As for brains, they are equally distributed. Obviously there are some psychological differences between men and women, but many of those that once were thought to be innate have been found to be the result of home environment or tradition.

It was once thought that it was not "natural" for a girl to possess scientific talents, as it was for a boy. Now girls are taking an interest in science to a greater extent than ever before, putting aside their dolls for microscopes.

One indication of this trend is the high percentage of girls—about half as many as boys—entering the local science fairs all over the country. Even in the stiff competition for the National Science Fair, many of the winners are girls.

And in the Science Talent Search 25% of the entries are from female teen-agers in

their senior year of high school. The Science Talent Search picks the country's top young scientists each year.

A survey of 31 women who participated in the first and second Science Talent Searches of 1942 and 1943 showed only three did not hold college degrees 15 years later, and even these three followed their scientific interest into some form of science after high school training.

Of the 28 who finished college, more than half hold degrees beyond the bachelor's and almost one-fourth have achieved the doctorate.

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ASTRONOMY

Atmosphere of Cool Stars Contains Water Vapor

► **EXISTENCE** of water vapor in the atmosphere of cool stars has been confirmed.

The observations were made from Stratoscope II, a high-flying balloon-borne 36-inch telescope equipped to make infrared measurements. New information on the composition of the moon's surface and on the number of ice crystals in interstellar space was also obtained from the flight last Nov. 26.

One of the cool red giant stars studied, Mira, was found to have an especially high amount of water vapor, Drs. R. E. Danielson, W. K. Rose, N. J. Woolf and Martin Schwarzschild of Princeton University Observatory reported to the American Astronomical Society meeting in Flagstaff, Ariz.

Although called a cool star, the temperature of Mira is about 1,900 degrees Centigrade, or 3,400 degrees Fahrenheit. The sun, considered a rather average star, has a temperature of 6,000 degrees Centigrade, or 10,800 degrees Fahrenheit. All visible stars are much too hot to support life.

Water vapor estimates resulting from the Stratoscope II flight ranged from the high revealed on Mira to a low of much less than one-tenth as much recorded on Betelgeuse, another cool red giant star. Four other cool red stars were also observed to have water vapor in their atmospheres, in amounts ranging between Mira's high and the low for Betelgeuse.

The moon's reflectivity in the infrared was measured accurately for the first time during the flight. The significance of this new information is still being evaluated.

Observations from Stratoscope showed that the number of ice grains in interstellar space is probably lower than had been thought.

They also confirmed that methane and ammonia are the major constituents of Jupiter's atmosphere.

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ASTRONOMY

Moon Eclipse Observed Successfully in Africa

► A NEW METHOD was used for the first time to make successful temperature observations of the moon during the June 24-25 eclipse.

Dr. Donald H. Menzel, director of Harvard College Observatory, Cambridge, Mass., told SCIENCE SERVICE that he had received cabled word from South Africa of the "fully successful" lunar expedition. Totality was obscured by clouds for most East Coast viewers.

A scientific team from Harvard College Observatory measured before and during the lunar eclipse the cooling rates of areas where temperature abnormalities have been reported. Their measurements will be analyzed after the scientists return to the United States.

The observations were made using the 74-inch telescope of Radcliffe Observatory in Pretoria, Republic of South Africa. Mounted at the telescope's focal point was a radiation pyrometer developed at Harvard College Observatory under the sponsorship of the National Aeronautics and Space Administration.

The instrument is so sensitive it can detect a change of one degree centigrade, or a little less than two degrees Fahrenheit, over an area nine miles square that has a temperature of 58 degrees below zero Fahrenheit.

During a lunar eclipse, the moon's temperature can drop more than 200 degrees. At a few places on the moon, the temperature drops more slowly than it does generally over the lunar surface.

The measurements were made over such areas of slower drop in temperature, probably regions where the insulating layer of dust is thinner than usual.

Andrew Young and Joseph Barry, also of Harvard College Observatory, assisted in the project.

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ASTROPHYSICS

Meteoroid Impacts Detected in Glider

► **HOLES** in a glider are providing valuable information on meteoroids miles out in space as a result of a probe launched from White Sands, N. Mex. missile range.

An inflatable paraglider was carried more than 500,000 feet (95 miles) out into space by an Aerobee rocket.

Holes made in sandwiches of aluminum-covered mylar, when analyzed, will tell National Aeronautics and Space Administration scientists the number, size, and depth of penetration of meteoroids hitting the glider.

Data from these sandwich-sensors were telemetered to the ground during the flight.

Both glider and rocket performed as expected, except that the canister which had contained the glider before inflation failed to detach, causing the glider to crash. However, this was after the experiments had been completed.

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