



**HALL OF BIRDS**—Examining the new Hall of Birds at the Smithsonian Institution in Washington are Star Bales and Jeffrey Robinson of Alexandria, Va. Opened formally on March 22, the hall features ten habitat groups showing typical activities of such birds as the Antarctic penguin and the African honey guide. Birds characteristic of nine major geographical areas are also displayed.

## GENERAL SCIENCE

## Future Russian Scientists

➤ **RUSSIA** faces a scientific manpower shortage in 1970.

The United States, on the other hand, may be enjoying a surplus of scientific manpower by 1970.

Evidence for the fact that in 15 years the manpower shortage shoe may be on the other foot can be found in the number of pupils enrolled for primary education in both nations.

Russian enrollment since 1950 has sagged. U. S. enrollment since 1950 has increased.

Ironically, where the bumper crop of American school children has caused serious problems for more qualified teachers and more classrooms, the situation in Russia appears to be reversed.

That Russia is heading for a manpower shortage is a delayed result of the Second World War. Experts here estimate that, during the five war years from 1941 to 1945, Russia had a birth deficit of 8,000,000.

Thus, by 1970 when these 8,000,000 babies would have reached college age, they simply will not be around.

By 1970, there will be more students in the U. S. of college age than at any previous time in the nation's history.

There were 22,225,000 pupils enrolled in grades kindergarten through eighth in the United States in 1950. In grades one through 10 in Russia in 1950, there were approximately 33,000,000 students.

Last fall, however, U. S. enrollment for kindergarten through eighth grade jumped to 27,738,000, while Russian enrollment for grades one through 10 decreased to about 28,500,000.

Although this sag in the number of students available for training as scientists and technologists will be temporary, it can hurt the Soviet Union's master plan for becoming the world's largest producer of scientists and technologists.

The Russians have tried to stop-gap the impending shortage by introducing a compulsory seven-year educational system throughout the entire nation shortly after the Second World War. This will soon be stepped up to a compulsory ten years.

This year, 1956, has already seen the first signs of a check in the increased enrollment of Russian children. By 1958, the rapid increase following World War II will have been brought almost to a standstill.

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## BIOCHEMISTRY

## Make Virus Hybrid For the First Time

➤ A **VIRUS HYBRID** has been produced for the first time by crossing viruses.

Better ways to produce immunity to diseases in 10 to 20 years, as a result of this achievement, are foreseen by Dr. Wendell Stanley, director of the University of California's virus laboratory.

The active hybrid viruses result from research by Dr. Heinz Fraenkel-Conrat. He crossed protein and nucleic acids from different strains of tobacco mosaic virus to form the active hybrid viruses.

Dr. Fraenkel-Conrat found that the infective part of a virus is in the nucleic acid, the part that immunizes in the protein.

This discovery, Dr. Stanley reported, may lead to synthesis of polypeptides to produce immunity in diseases where reproduction of the virus is not necessary.

When reproduction of the virus is required, proteins from the virulent strain and nucleic acids from the harmless strain may be used to get a reproducing hybrid that will immunize without infecting.

The protein Dr. Fraenkel-Conrat used in his studies was from the common tobacco mosaic virus and masked strain, while the nucleic acid was from these as well as from yellow acuba and Holmes ribgrass strain.

Five of six possible combinations Dr. Fraenkel-Conrat tried produced on tobacco plants the symptoms characteristic only of the strain supplying the nucleic acid part of the hybrid. The research is seen as a step toward producing better hybrid viruses that may give immunity to a disease without giving the disease.

Last year Drs. Fraenkel-Conrat and Robley Williams reconstituted a virus, taking it apart into inert proteins and nucleic acid components, then putting them together again. (See SNL, Nov. 12, 1955, p. 310.)

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## ASTRONOMY

## New Faint Comet Spotted in Sky

➤ A **FAINT COMET**, the third to be discovered this year, has been spotted in the sky by Dr. C. A. Wirtanen, an astronomer at the University of California's Lick Observatory, Mt. Hamilton, Calif.

The comet appears as a hazy spot of magnitude 15, much too faint to be seen without a large telescope. It is in the constellation of Hydra, the water monster, visible just above the southern horizon, and is moving slowly northwest.

Its trail was spotted March 17 on photographic plates exposed March 16 as part of the long-range sky mapping program to determine the Milky Way's rotation.

When discovered, the comet's position was right ascension, 11 hours, 47.5 minutes; declination, minus 30 degrees, 49 minutes.

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