

CONSERVATION

Request Land Exchange

► EXCHANGING BAD LAND for good recreation areas, farms for parks, and remote sections for urban access playgrounds was proposed by the Kennedy Administration to improve the U.S. conservation program.

President John F. Kennedy, in his message to Congress, asked for legislation to sell lands that are of little value or overabundant in remote areas, and buy land for recreation and parks in localities near large population centers.

One of his requests was for the establishment of a Bureau of Outdoor Recreation within the U.S. Department of the Interior to plan for the "numberless generations that will follow."

The President asked for "an affirmative program of land acquisition for recreational purposes," supported by a proposed "Land Conservation Fund," which would receive money from admission fees charged at Federal recreation areas, user charges on recreation boats, unclaimed taxes on gasoline for motor boats and receipts from the sale of surplus land.

An official source estimated the annual receipts from park admissions, now approximately \$5,000,000, would be channeled

into the fund. With the President's estimate of 341,000,000 visits each year to Federal lands, this figure is less than two cents per visit.

Since boat charges, gasoline taxes and receipts from land sales are also lower than the plan would need to swing into action, President Kennedy asked Congress to approve a \$500,000,000 advance over an eight-year period to begin the program.

Some of the immediate areas to be purchased if Congress gives the go-ahead include Point Reyes National Seashore in California, Sleeping Bear Dunes National Lakeshore in Michigan, Sagamore Hill National Historic Site in New York, and, possibly, the Ice Age National Scientific Preserve in Wisconsin.

The President also recommended legislation to allow state and local governments to buy surplus Federal lands for recreation "on more liberal terms."

His message also recommended more open-space areas in cities, the development of shoreline areas and a national wilderness preservation system, and assistance to water resources management agencies.

• Science News Letter, 81:164 March 17, 1962

MEDICINE

Key to Polio Paralysis?

► INCREASED CARBON DIOXIDE in the body may be the answer to the long-standing mystery of why one in a thousand polio-affected individuals suffers paralysis.

This is suggested in research conducted at the University of California, Los Angeles Medical School by Dr. Margret I. Sellers and John F. Lavender.

In the natural disease, polio viruses first multiply in the tonsils and small intestine, and some of them spill over into the blood stream. In most cases the body makes enough antibody to destroy the viruses, and the patient gets rid of the infection having suffered no more than a passing sore throat. Almost every individual past 40 has been infected by one or more of the three types of poliovirus without experiencing paralysis.

About one out of every thousand infected individuals, however, develops paralytic disease. The virus manages to escape from the circulating blood, crossing the so-called blood-brain barrier, which ordinarily acts to bar entry of viruses into the central nervous system.

Once in the central nervous system, the virus attacks the motor neurons that control muscle action. This injury to nerve cells causes the paralysis. The puzzle has been what happens in the one-in-a-thousand-cases that causes the events leading to paralysis.

The UCLA investigators injected polio viruses directly into the blood stream of mice. They then placed the animals in an

atmosphere of increased carbon dioxide. They found that animals in the increased carbon dioxide for as little as 30 seconds showed a definite increase in paralytic disease.

These findings were confirmed in monkeys. It was also noted that invasion of the central nervous system by certain other viruses was similarly enhanced by carbon dioxide.

A number of factors may be involved: 1. Increased carbon dioxide may cause a break in the blood-brain barrier enabling the virus to invade the central nervous system. 2. It also steps up blood flow through the brain and spinal cord, thus bringing more viruses. 3. Localized production of carbon dioxide within the central nervous system during exercise may facilitate entry of virus into particular nerve cells.

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ASTRONOMY

Instruments Carried Aloft Show Sky in Ultraviolet

► HOW THE HEAVENS LOOK in ultraviolet light has been found for the first time from the Southern Hemisphere using instruments carried aloft by rocket.

The same probe also made the first reported measurements from rockets of the moon's brightness in ultraviolet light. The

photomultiplier tubes used for the measurements were mounted on a Skylark rocket that was launched from Woomera, South Australia, on May 1, 1961.

Dr. D. W. O. Heddle reports for members of University College's Space Research Group, London, that seven observations of the lunar brightness were made from the rocket. They showed that the difference between the sun's radiance and the moon's radiance increases rapidly as the wavelength at which the measurements are made decreases.

Dr. Heddle's report is made in *Nature*, 193:861, 1962.

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