

## AGRICULTURE

# 100 Years of Agriculture

► THE U.S. Department of Agriculture and the agricultural revolution in America began 100 years ago.

The Department's official yearbook, "After a Hundred Years," just released in Washington, D. C., explains the significance of a century of agricultural advances. It began with the bill, signed May 15, 1862, by President Abraham Lincoln, which established the USDA, and the Homestead Act and Land-Grant College Act which followed in the same year.

"We cannot measure in tons or dollars or even in terms of stomachs filled and bodies clothed the accomplishments of these hundred years in agriculture," USDA Secretary Orville L. Freeman says in the preface, "for the achievement is not alone in numbers or amounts but in challenges met and responsibilities laid upon us."

Still the figures are there.

American farmers 100 years ago got an average of 80 bushels of potatoes an acre. Beginning in 1940, yields shot up to 300 bushels.

Although there were 60 acres of land for each person in 1862 compared to less than 15 now, it required one farmer to supply five persons with food. Now 26 are supplied by each farmer with both food and clothing.

In education, land-grant institutions have played a large role. In 1962, one-fifth of the total college population attended these institutions.

Forty percent of all doctoral degrees, including half the nation's total in science engineering and health, were granted by land-grant colleges and universities.

Hybrids, pesticides, artificial insemination, preservatives, flavorings, tractors, cultivators and scientific farming are part of a host of words added to the vocabulary in this 100 years. Mechanization, chemical, biological, physical and agricultural research are a few of the reasons for the revolution in agricultural production.

Insect control is a good example of the combined efforts of researchers and farmers over the century. Chemicals can be sprayed or dusted on animals and plants to combat these pests. The introduction of natural insect enemies to destroy pests and the use of radiation to produce sterile males to control insect populations have come to the fore in this line of agricultural attack.

The farmhouses of the last century were "monuments of the times and the men who built them," the yearbook says. There were houses of sod and adobe and houses of logs. But today's farm family enjoys electricity, oil and gas, the telephone, modern, sanitary buildings and the comforts afforded by an advancing civilization.

"Food prices have increased on the average less than incomes, and the average working man's wage today buys more food than did the wages of wage earners 100 years ago."

Food quality has increased over the past 100 years and the sanitary packaging, transport and marketing techniques have grown to great proportions. Just a few years ago, many of the foods which we presently enjoy were not available in many parts of the country.

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natural resource that is essential in the survival of our civilized culture.

Around the same campfire sits the President, the Secretary of the Interior and his many agencies, heads of other departments and the Outdoor Recreational Resources Review Commission with its distinguished members. Many of these persons were on hand at the hearings to testify in favor of the bill.

Since the legislation cannot carry over to the next session of Congress, Rep. Wayne N. Aspinall's (D-Colo.) Subcommittee is trying to push the legislation out through the Committee on Interior and Insular Affairs and onto the floor of the House, even if it is scrambled with many amendments.

Backers of the bill feel that once it reaches the House floor, it will be made into a sensible and workable act.

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## Oil Film Increases Crop Production

► A THIN OIL FILM sprayed on a field can increase crop production in underfed parts of the world.

Petroleum mulch sprayed over seeded areas was found to hold soil moisture and heat, increasing crop yields up to 111% in a wide variety of crops. Substantial increases were noted for carrots, melons, onions, cotton, sugar beets and sweet corn as well as other vegetables and grasses.

Test results have been promising in Europe, South America, North Africa and the United States, according to Esso Research and Engineering Company, New York. Other tests are underway in Canada, Asia and Australia.

The specially-formulated water emulsion of petroleum resins can be sprayed directly over seed rows. It retains moisture by reducing evaporation. It increases the temperature by absorbing more of the sun's rays.

In addition to higher crop yields, the mulch promotes early production. It can be plowed directly into the soil after use or combined with pesticides to give positive pest control, the company said.

Scientists are also studying use of the mulch for home lawns, especially on slopes.

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## CONSERVATION

# Hope for Wilderness Bill

► BACKERS of the proposed National Wilderness Preservation System are optimistic in the face of hearings by the House Public Lands Subcommittee in Washington, D. C.

The proposed system, envisioned in the so-called wilderness bill, would preserve intact and "untouched" some of the extensive, still "wild" areas in the nation's park and forest areas.

Hearings which began May 7 stressed possible ways to set up the system rather than whether it should be done, a Congressman explained to SCIENCE SERVICE.

Sen. Clinton P. Anderson (D-N. Mex.), co-sponsor of the wilderness bill, told the Senate last fall, "I do not recall a man or woman who was opposed to preserving some of our great, natural scenic areas in their primitive, wilderness state." The bill, S. 174, carried by a resounding 72 to 8 vote.

Since then, however, the bill has brought heated argument in the House. Although backed by President Kennedy and other leaders, the proposed system has received

a battering from western Congressmen representing mining, lumbering and cattle-raising interests.

"There would be no alteration of their present purpose as game ranges or refuges, parks, monuments or forests," Sen. Anderson pointed out. Where mining or cattle-raising is presently allowed, provisions have been made to continue these activities, he explained. But in most cases they have been already excluded under Executive Order or law.

Only 14.7 million acres out of 186 million acres which are presently in the national forest system would be reclassified as wilderness areas.

The father of the original bill, Dr. Howard Zahniser, executive secretary of the Wilderness Society, Washington, D. C., said that the opponents are thinking of possible future uses of the land, since they are not presently allowed to exploit these areas.

"I don't think the mining people should continue to fight this system," he said. The Society believes in wilderness as a valuable

## ASTRONOMY

## Planetarium Planned For Washington Area

### See Front Cover

► THE WORLD'S LARGEST planetarium is being planned for the nation's capital by the National Capital Planning Commission.

Seen on the front cover is an architect's model of the proposed Washington Planetarium and Space Center. The Commission hopes to build the \$1.5 million center on the Potomac at Daingerfield Island south of the Washington National Airport.

The dome, 85 feet in diameter, would be 2½ feet wider than the world's largest dome in Moscow. Purpose of the center is to encourage interest in and interpret the space sciences.

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