

## ANIMAL HUSBANDRY

# One-Man 'Pig Factory'

A swine farm in the vicinity of Moscow is raising animals with a minimum of labor, using automated equipment on a scale considered impractical in the United States.

► "THE BANNER OF OCTOBER," a state farm near Moscow, has automated equipment for raising hogs on a scale that is not considered economical in the United States.

Machinery on the farm enables one man to attend to about 4,000 hogs. The automated methods thus make it possible to raise 12 to 15 times more hogs per working hour than the average for farms in the Moscow area. Details of the pig factory are given in the Soviet journal "Science and Life," 4:148, 1964.

Although automated techniques for raising livestock originated in the United States, there are few examples here of installations on the enormous scale of the Russian one, U. S. Department of Agriculture East European specialist, Harry Walters, told SCIENCE SERVICE.

Above a certain size, the marginal profits of these farms are cancelled by costs, he said. It is doubtful whether an enormous "pig factory" could be commercially effective in the USSR, either.

The scale of the publicized state farm, or "sovkhoz," is not representative of others throughout the USSR, Mr. Walters said. Recently, however, Soviet newspap-

ers and speeches by Premier Khrushchev have repeatedly mentioned plans for such large-scale installations.

Last year, when the automated installations were first reported, the Soviet livestock population declined from 70 million to 30 million.

In view of the large labor force in Russia, Mr. Walters said, widespread use there of a method aimed at conserving manpower is unlikely.

On the Soviet automated farm, hogs are kept in a minimum of space, about 3¼ square feet per animal, on warmed brick floors. A conveyor belt for transporting and distributing fodder runs the full length of the building, dividing it into two sections of six pens each.

Finely-cut fodder travels from a "bunker-accumulator" to ten automatic food dispensers. One of these dispensers is capable of feeding 400 animals and can be filled within four minutes. A vacuum pump takes the fodder to feeding troughs in each pen.

The water level in the drinking troughs is kept high by a regulator in the control room. Jets of water remove manure and other wastes from the pens.

I. Emelyanov, agricultural counselor of the Soviet Embassy in Washington told SCIENCE SERVICE that the economic efficiency of the new farm has been excellent. The automated methods that have reduced labor requirements 12 to 15 times are considered a great advance.

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## ZOOLOGY

## The Sluggish Sloth Also Wears Green Growth

► GIANT TORTOISES of the Galapagos Islands are not the only animals to carry a greenish growth around with them. The two- and three-toed sloths, exotic creatures of Central America, also have a greenish tinge due to free-riding plant growth.

The discovery of lichens on the tortoises was reported in a scientific study by John R. Hendrickson, University of Hawaii, and Prof. William A. Weber, University of Colorado. This study was reported by SCIENCE SERVICE on June 19 as what was

believed to be the "first discovery of lichens on land animals."

Then a sharp-eyed reader in Escondido, Calif., Chapman Grant, dug into biological history and found that sloths, too, have green growths.

Further inquiries, however, showed that what the tortoises carry and what lives on the sloths are two different things. Lichens, a combination of fungi and algae, ride on the shells of the giant tortoises. Sloths, on the other hand, wear a green algae on their fur.

What is believed to be the first reference to the presence of algae on sloths was in a 1879-82 volume entitled "Biologia Centrali-Americana: Mammalia" by Edward R. Alston.

This 19th-century biologist explained that the greyish-green growth on the fur of the sloth is similar in color to the foliage of the olive tree, and provides an excellent camouflage for the animal. In this case a vegetable parasite is of direct benefit to its animal host.

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## DEMOGRAPHY

## Population Boom Called World's Biggest Problem

► THE WORLD'S worst problem is not Viet Nam, space travel or nuclear fall-out, but the more insidious population explosion, a sociologist told the 13th Annual Health Conference of the Commonwealth of Pennsylvania in University Park.

Dr. Gordon F. DeJong of Pennsylvania State University said each day the world's population increases by about 131,000 people, enough to fill a city the size of Erie, Pa.

In the 200 years between 1750 and 1950, the world's population multiplied only three and a half times. However, he said, if current trends hold, it will multiply itself about 20 times in the next 200 years.

"The population explosion is due, in a large part, to advances made by the public health and medical professions," he said. "It is to these same professions that men are turning for an alleviation of this problem."

One point to keep in mind, Dr. DeJong told the conference, is that the population explosion is not only a problem of Asia, Africa and Latin America, but affects all men who have anything to do with human needs.

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## ZOOLOGY

## Hormones Help Maintain Poultry Egg Production

► POULTRY egg production can be maintained for a limited time by using sex hormones, the Poultry Science Association was told at the University of Minnesota.

Dr. Wilbor O. Wilson of the University of California, Davis, said these hormones, called gonadotropins, helped quail lay eggs regularly up to ten days, if periods of extended darkness were provided. Shorter days normally cut egg production, he said.

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