pong is about two feet square and slopes from the middle toward each of the opposing birds. It has no net. A ball is placed in play in the middle of the table.

As the ball rolls toward one of the birds, he bats it with his beak and tries to send it past his opponent. The other bird tries to send it back. Rallies sometimes go to three or four shots. When one bird misses, the ball rolls into a trough in front of him and his opponent receives a reward of food.

Pigeons can be taught to cooperate with each other as well as to compete. In one experiment, pigeons in separate cages with glass partition between must simultaneously peck at matching buttons to release a reward of food. When the birds work together, both eat. If they fail to cooperate, neither is fed. Result: They work together successfully.

A difficult solo task is learning to play a little piano of seven keys. The pigeons were taught to peck out simple tunes such as "Take Me Out to the Ball Game," by rewarding them when they strike the keys in the right sequence.

Prof. Skinner is the psychologist who several years ago surprised his colleagues by teaching a rat to play a marble game to get food. He says he likes pigeons better than rats as laboratory animals. They live longer and are less susceptible to disease. The lifetime of a pigeon is as long as 15 years, whereas rats live only two or three years. And pigeons have a reaction time comparable to that of humans. They also have good color vision.

The pigeons have been taught to respond to lights of different colors. When a blue light shines, the bird will peck at a sign which reads "BLUE". When the light is yellow, green or red, he will peck at the sign marked with the appropriate color.

Science News Letter, June 17, 1950

CHEMISTRY-AGRICULTURE

Sugar from Palm Trees

➤ A NEW use for sulfanilamide reported by an Indian scientific institute in Kanpur, India, may make the world's palm trees a future source of sugar.

It was found that the sulfa drug can prevent the sweet juices of the date, coconut, sago and brab palms from fermenting after collection from the trees.

Fresh palm juice contains 10% to 14% sucrose. Sugar cane contains 11% to 16%. The palm juice, therefore, conceivably could be a useful source of sugar. The hitch is that the juices ferment very quickly. Their present use in tropical lands is restricted to making toddy (fermented juice) or liquor.

To keep the juices from fermenting even while they are being collected, the usual practice is to add lime juice to the pots. The lime does not preserve the fresh juice; it merely slows down fermentation.

Sulfanilamide, researchers at the Indian Institute of Sugar Technology learned, can preserve the juice in fresh condition from five to 20 days. No more than .008 of an ounce per gallon of juice is required.

This finding, say the scientists, could be a valuable contribution to the food store of the world. They believe sugar made from the millions of palm trees in tropical lands is now practical.

Under present-day techniques of refining sugar, even the tiny amount of the drug used as a preservative would be left behind when the final pure sugar is produced.

Science News Letter, June 17, 1950

Question Box

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● RADIO

Saturday, June 24, 3:15-3:30 p.m.

"Adventures in Science" with Mr. Watson Davis, Director of Science Service, over Columbia Broadcasting System.

Dr. Oswald Hedley, United States Health Commissioner for the Department of State, will discuss "Making Greece Healthy".

Sugar, the sweetener, is used in tanning operations to make chromic acid salts compatible with hide substances.

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