

PHYSICS

# Atomic Arsenal on Rails

**Suggest "Atomic Flyer" be built to travel around the country. Its deadly radiation would be used to fight the nation's destructive agricultural pests where they occur.**

➤ AN ATOMIC ARSENAL on rails designed to fight the nation's destructive agricultural pests was proposed to the American Nuclear Society meeting in Chicago.

As a mobile railway irradiation station, the proposed "Atomic Flyer" could be used to treat potatoes on Long Island to keep them from sprouting; process citrus fruits in the Southwest and curtail the Mexican fruit fly infestation; increase the shelf life of seafood in the maritime states and sterilize in the Midwest the insects in grain and cereal that annually eat their way through \$3,000,000,000 worth of food.

The preliminary design is already completed, Dr. Lloyd L. Brownell of the University of Michigan reported. It is hoped, he said, the 173-ton unit can be built by industry or the Government and placed in operation "within two years."

The Michigan engineers have estimated the radiation train would cost \$93,400 to build and \$114,000 a year to operate. The rolling station could handle from one-half to 11 tons of food an hour, depending on the dosage required. The cost of treatment per ton would range from \$2.55 to \$40.80.

How much air is exchanged between the stratosphere and the troposphere might be discovered by using radioactive tracers, L. Machta of the U. S. Weather Bureau, Washington, reported.

Both natural and man-made radioactive tracers have an important place in the study of the weather, he said. One project the meteorologist suggested was releasing the tracer, tritiated methane, at 70,000 feet in the stratosphere.

The substance could then be searched for at the ground from pole to pole. By this method, Mr. Machta said, it may be possible to tell how fast air in the stratosphere and troposphere mix and where the mixing is most effective.

Radioactive tracers could also play an important role in the study of air movements through jet streams, mixing of air from above the Antarctic continent, local sources of moisture for rainfall, and hurricanes.

The way in which "mock-iodine" and "phantom" patients are saving lives was described by Dr. Marshall Brucer, chairman of the medical division of the Oak Ridge Institute of Nuclear Studies, Tenn.

Radioactive iodine, Dr. Brucer explained, has proven useful in both medical diagnosis and treatment of thyroid disorders, but its uptake by the thyroid is still "highly variable." In order to standardize techniques, the Oak Ridge scientists have devised a "mock-iodine" made of a mixture of radioactive barium and cesium and tried it on

"phantoms," a set of full-sized half-body mannequins.

The "mock-iodine" is used because it has a useful life of over ten years instead of radioactive iodine's eight-day half life.

Scientists throughout the country, he said, are being sent these dolls in an informal survey to determine the variability of uptake by the thyroid in order to develop acceptable standards for the safe treatment of patients.

Science News Letter, June 16, 1956

CHEMISTRY

## Color Test For Tobacco

➤ COLOR, not taste, will soon be the standard experts use to judge tobacco.

A color comparison test, which permits scientists to judge the quality of tobacco while it is still growing, speeds up the process of breeding high-quality tobacco plants. The U. S. Department of Agriculture scientists who discovered the new method expect it to produce better tasting tobaccos.

The tests will enable plant breeders to develop strains of tobacco that do not have unwanted alkaloids. Until now, breeders have had to wait until tobacco has been aged, manufactured into cigars or cigarettes, and "taste tested" before undesirable alkaloids could be discovered.

Using the technique of paper chromatography, scientists can identify alkaloids in tobacco plants. Added color-reactant chemicals show the position and amount of each alkaloid present.

Science News Letter, June 16, 1956

# Questions

**ANTHROPOLOGY**—How might an anthropologist studying U. S. residents for the first time describe them? p. 372.

**BIOLOGY**—What is a trip of seals? p. 378.

**MEDICINE**—Why is arthritic pain believed worse in the morning? p. 375.

**PUBLIC HEALTH**—How much do tests for syphilis cost? p. 372.

**RADIO ASTRONOMY**—In what two ways can planets broadcast radio waves? p. 374.

**VITAL STATISTICS**—What is the peak hour for baby births? p. 371.

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MEDICINE

## Age of Arthritis Start May Relate to Gland Age

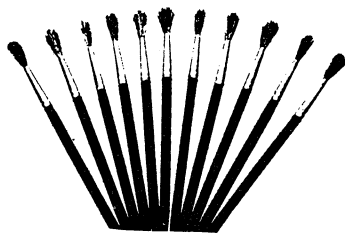
➤ AGE may influence production of hormones by the adrenal glands. This may explain why the signs of the rheumatic diseases may vary with different age groups.

This possibility was suggested by Dr. Edwin R. Hughes of the University of Utah College of Medicine, Salt Lake City, at the meeting of the American Rheumatism Association in Chicago.

The concentration of adrenal hormones, he found, is "significantly higher" in the blood of infants than in that of children or grown-ups.

Science News Letter, June 16, 1956

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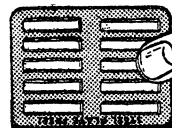


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