

Questions

ASTRONOMY—What is the top highlight in astronomical research as interpreted by Dr. Shapley? p. 66.

MEDICINE—What drink is preferred by Brazilian alcoholics? p. 73.

MILITARY SCIENCE—Which weapons shown in the Inaugural Parade had never before been on display? p. 69.

PHYSICS—What are three known proofs of general relativity? p. 68.

SURGERY—What role does the hearing aid now play in the operating room? p. 70.

VETERINARY MEDICINE—How may the study of deer's antlers aid man? p. 75.

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PHYSIOLOGY-CHEMISTRY

Studies to Perfect Irradiated Food

► **IRRADIATED** food, that dream of all campers and GI's by which they can pull a cellophane-wrapped steak from their knapsacks and broil it over a fire, has not yet been perfected, but scientists are working on it.

The long range objective of this research, now being carried out for the Army at the University of California at Los Angeles Medical School, is to determine the feasibility of atomic sterilization of food, particularly meat.

Such cellophane-wrapped, sterilized food could be stored indefinitely at room temperatures and transported without use of bulky refrigeration equipment.

There are presently three obstacles to use of this process. Irradiation causes chemical changes that sometimes produce 1. toxic substances, 2. unpleasant flavor and 3. unappetizing appearance.

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Studies at UCLA are concerned with the biochemistry of these changes. These have suggested that irradiation of fats produces toxic peroxides which are harmful in certain concentrations. The research has also indicated that atomic sterilization might be possible at levels which would not produce peroxides in harmful concentrations: The biochemistry of flavor and appearance changes is also under study.

The UCLA research is being carried out by Drs. James Mead, John Andrews and Wendell Griffith of the physiological chemistry department under a contract with the Office of the Surgeon General.

Science News Letter, February 2, 1957

AGRICULTURE

Fatal Texas Weed May Yield Cortisone

► A **WEED**, responsible for the death of livestock in the Southwest, may be a new source of cortisone, a drug widely used to treat arthritis, inflammatory eye diseases, asthma and other painful ailments.

The weed is a plant called *Agave lecheguilla* that, although presently on the pest-control wanted list, may soon be cultivated for its life-giving chemicals.

U. S. Department of Agriculture chemists in Washington have discovered in the weed a substance known as smilagenin. By chemical means, cortisone can be made from smilagenin.

Although higher yielding plant sources for the pain-reliever are now known, agave is important because it grows in such great amounts within the United States. It covers thousands of square miles in the Big Bend region of Texas, where it is often fatal to sheep and goats eating it.

The plant may also provide an emergency source of cordage fiber, normally imported, for use in making rope and cord if necessary.

Science News Letter, February 2, 1957

TECHNOLOGY

Adapt Slingshot to Cottonseed Grading

► **THE SLINGSHOT** principle has been adapted to grading and sorting cottonseed. The machine, called a differentiator, was developed by engineers of the U. S. Department of Agriculture.

Just as a pinch of small pebbles are shot from the pouch of a slingshot, the new machine shoots cottonseed out five to 100 feet beyond its projector.

The farther the seed is thrown, generally, the higher its quality in terms of oil and nitrogen content. The closer the seed falls to the slingshot-like machine, the lower its quality, with more moisture and free fatty acids that show the seed has a tendency to rancidity.

The present pilot-scale model can handle up to 200 tons of cottonseed a day and its output could be increased by simple changes.

The economic value of such a machine has not yet been determined, but it could help in producing high-grade cottonseed products and also in utilizing lower grades of seed because, when separated, they could be used first before they spoiled.

Science News Letter, February 2, 1957

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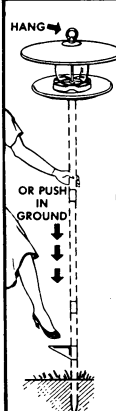
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