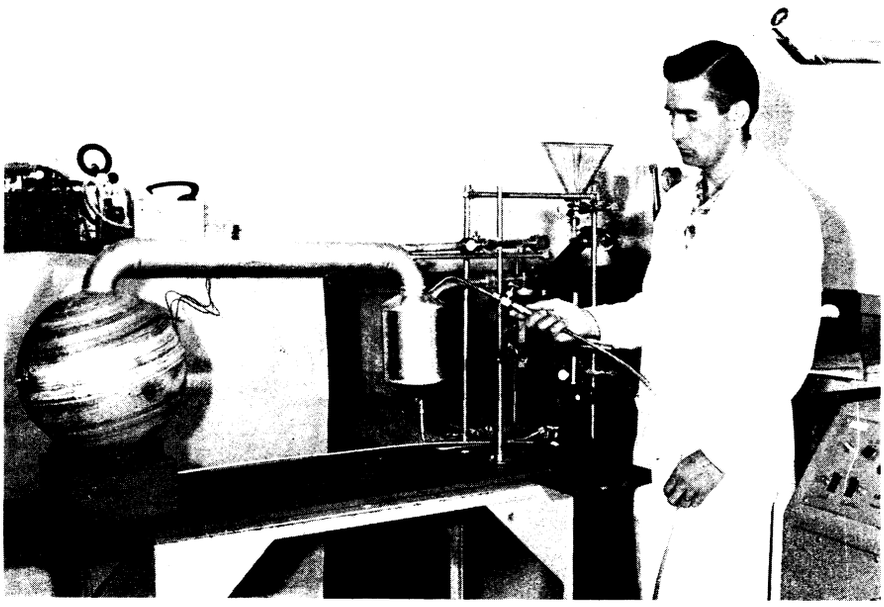

CORE COMPONENT TESTED—Designed for the water boiler type of atomic energy reactor, the core component is being checked out by a scientist of North American Aviation, which built the self-contained reactor in California for the Atomic Energy Commission. Uranium 235, held in water solution in the sphere, fissions to produce a high neutron density.

ENTOMOLOGY

Kill Hardy Super-Flies

➤ SUPER-FLIES THAT laugh at DDT and other insecticides can be killed with a newly discovered chemical compound mixed in common table syrup, Dr. Willis N. Bruce, of the Illinois Natural History Survey, Urbana, has found.

The syrup-bait contains Bayer L 13/59 as a killing agent. After the syrup hardens, the flies are killed as their salivary secretion dissolves the poison-laden syrup. This method has a long-term effectiveness. Dr. Bruce reported that it continues to attract and kill flies for as long as 26 weeks.

DDT and other organic insecticides did much to control the fly population for a short time but as resistant species of flies developed, scientists began looking for other poisons which would have a similar long residual killing power.

The new compound, a di-alkylphosphate, has not yet been approved by the U. S. Food and Drug Administration for use commercially. Dr. Bruce reported, however, that the poison will not injure humans or animals in the amounts used to kill flies.

Dr. Bruce first found that Bayer L 13/59 was effective against house flies for only two or three days when used in a dilute sugar solution. But when mixed with undiluted syrup that hardens, it will kill flies throughout the entire house fly season.

In dairy barns and other buildings where the bait was applied in small amounts with a paint brush to window frames and other favorite fly roosting places, it gave 90% to 99% control of the fly population.

Dr. Bruce pointed out that this new method should be used with screening, sanitation and other techniques of controlling the fly population for best results.

Science News Letter, January 16, 1954

PHYSICS

Will Build 25-Billion-Volt Particle Accelerator

➤ THE U. S. will build a 25-billion-volt atom smasher at Brookhaven National Laboratory, Upton, N. Y., the Atomic Energy Commission has announced.

Estimated to cost $20,000,000 before completion, the giant particle accelerator will unleash, under man's control, some of the power found in the cosmic rays continuously bombarding the earth. The machine, known as an "alternating gradient synchrotron," will use the new, strong-focusing idea worked out nearly two years ago.

The strong focus results from the use of many small magnet sections, rather than the larger ones now common, to focus the whirling atomic particles. The small magnet sections act somewhat like the concave-convex mirror systems used to focus light beams. (See SCIENCE NEWS LETTER, Sept. 27, 1952, p. 197, and Sept. 12, 1953, p. 163.)

Science News Letter, January 16, 1954

• RADIO

Saturday, Jan. 23, 1954, 3:15-3:30 p.m., EST

"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Dr. Curtis F. Culp, director of medical services, National Foundation for Infantile Paralysis, will discuss "Vaccinating Against Polio."

VETERINARY MEDICINE

Blue Tongue, Sheep Virus Spread by Common Gnat

➤ BLUE TONGUE, a dreaded virus disease in sheep, may be spread by common gnats.

Dr. D. A. Price, veterinarian at the Sonora Substation of the Texas Agricultural Experiment Station, reported recently that during an experiment Sonora workers produced the disease by injecting sheep with an emulsion prepared from gnats collected in that area.

A virus disease once thought to exist only in South Africa and on the island of Cyprus, blue tongue now is believed to have existed in the United States for at least 20 years.

First reported as "soremuzzle" by Texas workers in 1952, the disease was found to be widespread in 1953. It was recognized in California and specimens sent to South Africa gave positive identification. Dr. Price says that one strain has been isolated and vaccine tests are being made in an effort to find a vaccine similar to the one used successfully by South Africans.

Recent research indicates there are at least three strains in Texas. These pose immense problems in isolating each and preparing a vaccine for its control. Although natural infection or vaccination provides lifelong protection against one strain, it does not necessarily protect against others.

The U. S. Department of Agriculture's interest in Dr. Price's finding is shown by a survey to classify carrier gnats in the Southwest. The survey is being performed by the Bureau of Entomology and Plant Quarantine at the request of the Bureau of Animal Industry.

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HORTICULTURE

Best Plant Slips Come At Non-Flowering Season

➤ TO HAVE plants grow from cuttings of roots or stems, make them at a time when the plant is not flowering.

Experiments reported by Dr. J. Dore of the University of Southampton's botany department in *Nature* (Dec. 26, 1953) show that the regenerating capacity of horseradish cuttings is low during the months of flowering.

Older studies showed that of 12 kinds of plants, only two actually regenerate best during flowering, while five regenerate most efficiently before and five best afterwards.

Science News Letter, January 16, 1954