



FASTEST LAND VEHICLE—This rocket sled has traveled 1,100 miles per hour on the sled track at the Edwards Air Force Base test center. The sled's tail portion provides a potent thrust blast, after which rockets on the front section are used to continue the sled's motion. Here it is being prepared for an instrumental test at supersonic speeds.

BIOPHYSICS

Electrons Sterilize Drugs

➤ **SPEEDY STERILIZATION** of drugs in sealed containers by electron "bullets," was announced by the Upjohn Company in Kalamazoo, Mich.

Sterilization kills any bacteria that might have contaminated the drugs.

So far as is known, this is the first "routine application of high speed electrons in the pharmaceutical industry for commercial purposes," Dr. Richard S. Schrieber, vice-president and director of research for Upjohn, said.

First two products being sterilized by the new method are eye medicines. One is a combination of the antibiotic neomycin and the hormone hydrocortisone, trade named Escap Neo-Cortef. The other is an ointment containing neomycin that Upjohn calls Escap Myciguent.

The machine producing electrons for sterilizing is a two-million-volt Van de Graaff accelerator, originally built for cancer research and redesigned for drug sterilization.

The electrons, traveling about 175,000 miles per second, kill all living organisms in the drugs in a fraction of a second. They do so without appreciably raising the temperature or affecting the drug's potency.

Pharmaceutical preparations are now sterilized by heat, by addition of chemicals or by filtration.

Drugs sterilized by the Van de Graaff

accelerator have been successfully used by clinical investigators for several years, the Upjohn company reported.

Subject to Review

➤ **FOOD AND DRUG** Administration officials, questioned by **SCIENCE SERVICE** about the new electron sterilization method, said drugs sterilized by any method must come through the standard new drug procedures.

Manufacturers must show, for each individual drug, that the sterilization method does not cause loss of potency or change in character of the drug and, of course, that it does kill the germs.

Science News Letter, August 6, 1955

INVENTION

Sleep Inhibitor Receives Patent

➤ A **HEADPHONE** that buzzes when your head nods has been invented. Its power is derived from self-contained flashlight batteries. The device, invented by Warren E. Morrison of Minneapolis, Minn., was awarded patent No. 2,713,159. One-half the patent rights were assigned to Lev Pinomaki of Minneapolis.

Science News Letter, August 6, 1955

VITAL STATISTICS

Summer Is Year's Most Dangerous Season

➤ **SUMMER IS** the season in which 25,000 persons in the U.S. are killed accidentally, many by negligence and recklessness.

Increased outdoor activity adds to the accident toll that reaches its yearly peak during June, July and August, statisticians of the Metropolitan Life Insurance Company have found. They urge greater vigilance during these months.

Drownings, which have a high summer concentration, claim more than 5,000 lives yearly. Swimming should be made part of a child's general training, which would cut down the toll from drowning, they said. Swimmers should also be cautioned against attempting feats beyond their strength. Mishaps on boats also reach peak incidence in summer. Automobiles, however, cause more accidental deaths than any other category.

Science News Letter, August 6, 1955

GEOPHYSICS

"Blobs" of Air Cause Some Stellar Twinkling

➤ **TWINKLING OF STARS** in the night sky is caused partly by "blobs" of air, clusters that are very different in density, temperature and water content from the surrounding atmosphere.

"Blobs" range in size from less than an inch to many feet and are globular, lens-like or cylindrical in shape, Dr. F. Zwicky of Mount Wilson and Palomar Observatories, Pasadena, Calif., reported in *Science* (July 22).

"Often hundreds of blobs are quite regularly spaced and drift with the winds at various altitudes" at least as high as 30 miles, Dr. Zwicky said. "Durability and stability" is their "most amazing feature."

A blob's lifetime can be observed through condensation of moisture content, such as found near vapor trails left by jet planes. The reasons blobs last so long are not well known, but Dr. Zwicky suggested heat or electricity may cause the stability.

Partly because of blobs, stellar images through telescopes are sometimes displaced, focused either slightly in front or behind the photographic plate.

Studying such extrafocal images of bright stars and how they change promises "to produce a wealth of information on all the important disturbances in the earth's atmosphere," Dr. Zwicky said.

The studies could be made with instruments now available to meteorologists, amateur astronomers and photographers, who should be "encouraged" to explore a field so useful to understanding and forecasting weather and to atmosphere physics.

Discussing blobs in French and German, Dr. Zwicky, a Swiss citizen, called them "mollusques d'air" and "Luftmollusken," meaning mollusks (or shellfish) of air.

Science News Letter, August 6, 1955