

METEOROLOGY

Tornadoes Break Records

► **TORNADOES** striking the U. S. the first five months of this year have broken five "all-time" records, the U. S. Weather Bureau reports.

New records have been established for the highest number of twisters during the first four months of any year, 300; during the first five months of any year, 624; during any April, 236; during any May, 324; and during any month of the year, 324.

Undoubtedly, this is a "very severe tornado year," Weather Bureau experts conclude. Even the improved reporting of tornadoes, which grows better every year, they say, would not account for the record-setting year.

They blame persistent weather patterns that have, for instance, brought some rain to Texas for 40 days in a row. The high-flowing broad stream of air known as the westerlies does not circle the earth in a straight line, but instead meanders to form high points and low points known as ridges and troughs.

One trough has remained almost stationary near the Rocky Mountains.

Ahead of this low point in the upper level air is found the warm, moist air from the Gulf of Mexico. Behind the trough is the cold, dry air coming down from Canada and the Arctic. Where these two air masses clash, there are thunderstorms and often squall lines.

Tornadoes are usually embedded in squall lines.

Normally, the planet-wide ridges and troughs of the westerlies move gradually from one position to another. The recent persistence of weather patterns is illustrated, Weather Bureau experts point out, by the fact that almost half of the 300 tornadoes

occurring between January and April hit in either Texas or Oklahoma.

Official Weather Bureau records indicate 17 tornadoes struck somewhere in the U. S. in January, five in February, 42 in March, 236 in April and 324 in May. An estimated 125 persons had been killed by twisters through May.

Damage from the storms is reported to amount to \$2,505,000 in January, \$5,500 in February, \$607,000 in March and \$17,201,000 in April. Although damage figures for May are not yet available, the May 20 twister that hit Kansas City and demolished 500 homes is certain to have exceeded the total April damage. That one storm alone perhaps cost as much as \$75,000,000.

Science News Letter, June 22, 1957

MEDICINE

40 Smoking Rabbits Aid Lung Cancer Research

► **FORTY RABBITS** are each smoking a pack of cigarettes per day and enjoying it.

What seems to be fun for the rabbits is a serious study to determine whether smoking can cause lung cancer. Keeper for the 40 smoking rabbits is Dr. Robert H. Holland of the Veterans Administration Hospital in Dallas, Tex., who is trying to find some answers to the lung cancer problem.

Rabbits, Dr. Holland explains, react to certain lung conditions more like humans than do rats, mice or other laboratory animals.

It is estimated that by 1961 the 40 rabbits will have puffed away on 1,600,000 cigarettes.

To do their smoking for science, the rabbits are housed in specially constructed plastic "smoking boxes." The rabbits are put into the boxes for three out of every 24 hours. Once in the box, a lighted cigarette is set exactly two centimeters from the animal's nose.

The animal gets fresh air at all times, but when electric timing devices and solenoid switches close an aperture in the box, the rabbit gets a puff of smoke.

The rabbits are X-rayed every six months and if one dies before the normal five-year life span, the lungs and respiratory tracts are examined and the findings recorded.

Dr. Holland says that strangely enough the rabbits seem to enjoy smoking, particularly the New Zealand Reds.

Some of the cigarettes being used have been impregnated with radioactive arsenic tracers. This is being done to find out whether there might be a relation between arsenic and cancer. Arsenic, used in agricultural sprays, has been thought to have seeped into the earth and then been drawn up into the tobacco plant.

The research, supported by funds from the VA and U. S. Public Health Service, is still in the early stage and no results have been reported.

Science News Letter, June 22, 1957

TECHNOLOGY

Tracker Spots Pop Bottle From Four Miles

► **AN OPTICAL** tracking system so powerful it can photograph an object two inches by seven inches, smaller than the average pop bottle, at an altitude of four miles is now being tested by the Air Research and Development Command, U. S. Air Force.

The six-ton tracker, completely mobile, will be used to photograph the flight history of bombs, aircraft and missiles, recording such information as altitude and spin. Called the TPR for telescopic photographic recorder, the instrument was designed and built by the Perkin-Elmer Corporation, Norwalk, Conn. It is being tested at Eglin Air Force Base, Fla.

Major component of the TPR is a nine-foot-long reflecting telescope, two feet in diameter, equipped with a 70 mm motion picture camera. The tracker can be operated either remotely or by operators.

Science News Letter, June 22, 1957



OPTICAL TRACKING SYSTEM—The telescopic photographic recorder, or TPR, shown in the photograph is the nation's first completely mobile, high-performance optical tracking system capable of photographing the flight of bombs, aircraft and missiles. The 70 mm motion picture camera is in position mounted on the telescope. It was developed and built by the Perkin-Elmer Corporation, Norwalk, Conn.