METEOROLOGY

Weather May Be Warming

Despite the recent cold wave that hit the eastern part of the nation, meteorologists are continuing to find evidence of a general warming up with higher average temperatures.

➤ ALTHOUGH the two-thirds of the nation east of the Rocky Mountains that shivered in the season's worst cold wave during the better part of February may find it hard to believe, the Northern Hemisphere averaged nearly two degrees warmer than usual for the period from mid-January to mid-February.

This higher-than-usual average results from the fact that the planet-wide circulation was locked in a stable pattern, with cold pools of air far to the south offset by warm pools of air to the north.

In spite of the severe cold that hit much of the nation, particularly the Southeast, there is no evidence winters are growing colder. One hard winter, resembling those remembered from childhood or the traditional ones from grandfather's day, does not represent a trend, Jerome Namias, chief of the U. S. Weather Bureau's extended forecast section, Suitland, Md., said.

He pointed out that one winter does not mean a change in climate any more than "one swallow makes a spring."

Actually, there is good evidence that average temperatures have increased a little more than two degrees since the turn of the century. Not only thermometer readings averaged over the years but receding glaciers indicate the warm-up, which is more pronounced in the northern latitudes of Greenland and Alaska, etc., than at lower latitudes.

Why the world is warming up, at least in the Northern Hemisphere, is not known, but three theories each have supporters.

The first proposed explanation is that the carbon dioxide poured into the atmosphere by a booming industrial civilization could have caused the increase. By burning up about 100 billion tons of coal and oil since 1900, man himself may be changing the climate. Carbon dioxide and water vapor in the earth's atmosphere act like a greenhouse, trapping heat.

Another explanation is that the warm-up is associated with changes in the sun's radiation over a long period. Some have even suggested there is an 80-year sunspot cycle during which the sun's tremendous outpouring of energy rises to a high point, falls, then rises to another high point.

A third explanation is that the dust and ash thrown high into the atmosphere by exploding volcanoes remain there to drift around the world, acting as a cover to shield from the sun's radiation. This shielding effect paradoxically results in higher average temperatures.

The 30-day average temperature increase to mid-February computed by Mr. Namias is a short-term, not a long-period, effect.

It covers only the lower third of the atmosphere, and is as accurate as the available data allow.

Mr. Namias said the temperature averages could be broken down into several zones. From 45 degrees north latitude northward, the month-long temperature rise was nearly three degrees Fahrenheit. Between 30 and 40 degrees north latitude, the average was about one degree colder than normal. In latitudes about 20 degrees north, the average was about two degrees above normal. Elsewhere, average temperatures were near normal.

The normals are based on close to 30 years of world-wide temperature readings.

The very stable circulation pattern resulting in the cold air pouring down into the country's midsection and Southeast is sure to shift in March due to the natural warming of the atmosphere by the sun as spring arrives.

Science News Letter, March 1, 1958

GEOPHYSICS

Arctic Ice Island Has Record Low Temperature

➤ THE ARCTIC ice island T-3 hit a record low of 64 degrees below zero Fahrenheit on Jan. 4, the U. S. National Committee for the International Geophysical Year, or IGY, has reported.

Only 20 days later, thermometers read 23 degrees above zero. Mean temperature for January was minus 23 degrees, compared with minus 40 degrees for December.

On Jan. 2, the island's position was 80 degrees, 39 minutes north, and 112 degrees, 55 minutes west. During the month a series of high winds moved it eastward to approximately the same position it had occupied in late November.

T-3 is a 36-square-mile ice island that originated from fresh water shelf ice. It was first occupied by Air Force scientists in 1952 and was reoccupied in May, 1957, by IGY scientists at Station Bravo, one of two drifting stations in the Arctic Ocean.

Science News Letter, March 1, 1958

METEOROLOGY

Cloud Cover Survey Supports Rain Theory

➤ A SURVEY of high-level cloud cover over Australia supports the theory that when meteoritic dust sifting down through the earth's atmosphere hits just the right weather conditions, a heavy rainfall follows.

Dr. E. K. Bigg of the Commonwealth Scientific and Industrial Research Organization, Sydney, examined records of cirrus clouds for 18 representative Australian stations for the last few days of December, January and the first few days of February during the period from 1939 to 1956. He found that the cloud cover was much higher than usual each year on Dec. 28, Jan. 12 Jan. 22 and Feb. 1.

These are the same days on which Dr. E. G. Bowen, director of the CSIRO's radiophysics division, found rainfall was particularly high. Dr. Bowen therefore suggested the high rainfall peaks occurred a month after a meteor shower, resulting from the seeding of clouds by tiny particles of meteoritic dust.

Such seeding could also affect the occurrence of cirrus clouds, Dr. Bigg reports to fellow weathermen in the *Journal of Meteorology* (Dec. 1957), bimonthly publication of the American Meteorological Society.

Science News Letter, March 1, 1958

ENGINEERING

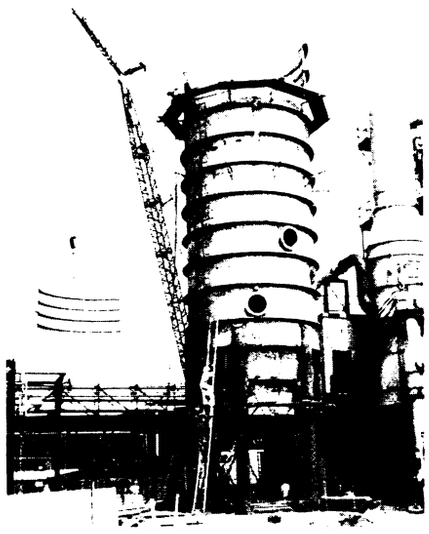
Electric Cable Steers Auto Automatically

➤ AN AUTOMATICALLY guided automobile cruised along a one-mile check road at General Motors Technical Center, Warren, Mich., in a demonstration of what may be in the future for highway driving.

Dr. Lawrence R. Hafstad, vice president in charge of the GM research staff, said the demonstration car was guided by a combined electronic computer and servo mechanism which takes over human steering control by following a magnetic path produced by low frequency power in an electrical cable under the highway.

"Our particular system," he said, "is still in the research stage and as yet is limited to steering control." It does, however, point to the possibility of a built-in guidance system for tomorrow's highways.

Science News Letter, March 1, 1958



GIANT CRYSTALLIZER — About 300 tons of ammonium sulfate, a fertilizer, can be made daily in this stainless steel crystallizer. It weighs more than 150 tons, is 82 feet high with a 20-foot diameter. Allegheny Ludlum Steel Corporation supplied the steel for the crystallizer which is being built in Hopewell, Va. for the National Aniline Division of Allied Chemical & Dye Corporation.