

AERONAUTICS—METEOROLOGY

# Weather Apparently Cause Of Destruction of the Akron

UNUSUALLY violent vertical currents of air, such as are commonly found along the "wind shift line" of a storm at sea, are suspected of having caused the "Akron" disaster by scientists of the U. S. Weather Bureau. C. L. Mitchell, principal meteorologist, informed Science Service that such a line did extend out over the sea near Barnegat at the time of the "Akron's" last voyage, and that thunderstorms, the usual accompaniment of a "line storm," had been observed late Monday night.

Dr. J. W. Humphreys, the Weather Bureau's leading physicist, explained that these vertical air currents are caused by the encounter of masses of warm and cold air. Since there is a marked difference in the specific gravity of such air masses, the warmer air tends to rise and the cold to flow to the bottom, thereby setting up "boiling" currents very similar to those which can be seen in a kettle of water being heated on a stove.

Such vertical currents, he said, may leap upward or plunge downward as much as twenty thousand feet, so that even if the "Akron" had been flying at an apparently safe height when one of them caught her, she might have been whirled upward and demoralized, or forced downward and caught by the waves. While a modern rigid airship can defy ordinary vertical gusts with impunity, these vertical winds are so powerful that propellers and rudders are of no avail against them.

Vertical winds often have very sharp

boundaries, and a pair of them, one blowing up and the other down, may exist within a few feet of each other. The "line storm" that destroyed the "Akron's" ill-fated predecessor, the "Shenandoah," apparently caught that airship in such a pair of oppositely flowing vertical air currents.

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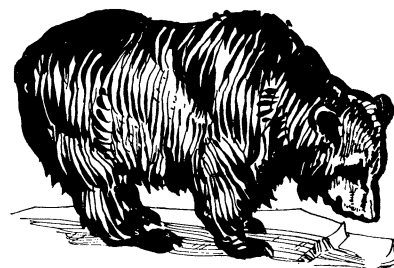
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trained on it. The smoke column broke into four or five segments which rotated ten degrees and coalesced to form a striated cloud. The highest segment remained isolated. The cloud was brightly illuminated with fringes appearing alternately rich blue, then white. The isolated segment emitted brown light. The meteor was first noticed at 5:05 a. m., when the train was at Springer, New Mexico. The sun rose at about 6 a. m., when the train I was on was at Wagon Mound. At 6:15 a. m., the cloud was still visible."

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On the lofty ice cap of Greenland the temperature may fall as low as 130 degrees below zero.

The Peruvian congress has taken steps to make Cuzco, capital of the ancient Incas, the archaeological capital of South America, and has transferred the Peruvian National Museum from Lima to Cuzco.



## Sleepers Awaken

WHEN BEARS come out of their caves and hollow trees in the mountains, and ground squirrels, woodchucks and frogs emerge from their underground hiding-places in our own more prosaic fields and waysides, they are like the plants in responding to the sun as both alarm clock and ultimate source of energy for the new season.

Animals that hibernate are sent into their long winter sleep by the warning of the retreating sun and frosty nights in the fall. And when they come out in spring it is largely a result of their being warmed up again.

For it is a curious fact that hibernating mammals become temporarily cold-blooded. They become almost as cold-blooded as snakes and frogs, their body temperature dropping far below that of the normal bodily heat of warm-blooded animals, to a few degrees above freezing-point. In that state they become limp lumps of fur, breathing only a few times a minute, and are nearly insensible to stimuli that would ordinarily awaken them from a sound normal sleep.

Dr. George E. Johnson of the Kansas State Agricultural College made experiments on hibernating striped ground squirrels. They could be handled, even shaken or pricked with pins, but beyond breathing a trifle more rapidly made no response. Taken into a warm room the breathing rate increased, and the heartbeat, which had been imperceptible even with a stethoscope, asserted itself and gradually reached normal rate. At the same time the body temperature went up, and when it approached normal mammalian warmth a typical animal roused, stood on its feet, and even showed some signs of fight. (Next Page)

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