

wind. The values of these elements must therefore be measured and corrections applied in order to secure accuracy in spotting enemy gunns.

The sound ranging unit of the United States Army is located at Fort Bragg, and the Meteorological Section at that place furnishes the necessary meteorological data. These data consist of surface temperature and the wind speed and direction at the surface, 250 feet, 1000 feet and 2000 feet. It has recently been determined that greater accuracy can be attained by applying corrections for variations in the vertical temperature gradient from the surface to at least 500 feet.—*D. Wobbe, Meteorologist, Fort Bragg, North Carolina.*

#### FLYING WEATHER OBSERVERS

In many parts of the world airplanes have recently replaced kites as a means of obtaining records of weather conditions in the atmosphere at high levels, more comprehensive than the wind record obtained with pilot balloons, and much more promptly available than the records of barometric pressure, temperature and humidity obtained with sounding-balloons. In the United States, planes carrying self-registering weather instruments make daily flights at Chicago, Cleveland, Dallas, Omaha and Atlanta early each morning—before daylight during most of the year—in order that the results may be reported by telegraph in time to aid in making the morning weather forecasts at Washington and other forecast centers.

“The superiority of airplanes over kites,” says J. A. Riley, of the U. S. Weather Bureau, “is their regularity. They are not dependent on the vagaries of the wind, nor are they stopped by unfavorable weather. After more than nine months of operation not one daily flight has been missed at Dallas, and almost equally complete records have been obtained at the other stations. The flights are made on schedule, and nearly the same altitude is reached day after day, instead of the widely varying altitudes reached with kites. The average altitude by airplanes is about twice that formerly reached by kites.”—*C. F. Talman, in Why the Weather? (SS).*

#### SEVERE LOCAL WEATHER

*Hailstones that kill.*—Nanking, June 24.—Dispatches telling of 200 persons being killed and thousands injured in a severe hailstorm in the western section of Honan province Sunday, were received. Extremely large hailstones, the report said, fell for two hours, destroying 400 villages, razing houses, crops and trees.

*Big Hailstones.*—Two or more pieces of ice, melting at the surface, placed in contact with one another, soon freeze into a single mass, even in a warm atmosphere. The process is called “regelation.” Hailstones lying closely packed together on the ground may thus form lumps of almost any size. It is an open question whether regelation or sheer imagination is responsible for the tale of a hailstone as big as an elephant, said to have been found in southern India in the days of Tippoo Sahib. Then there is the block of ice twenty feet in its largest diameter alleged to have fallen at Dharwar, India, in 1838, and the piece “as big as a millstone” that Father Huc, the French missionary, reported to have fallen near his house in Mongolia about the same period.