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A Science Service Feature

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? WHY THE WEATHER ?

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SOUNDING BALLOONS

While we still hear of balloon racing, the day of altitude flights with manned balloons has long passed. Making high altitudes in a balloon was hardly sport for the participants. They read their thermometers and barometers, observed the aspects and heights of the clouds and noted other points of meteorological interest. When they reached very great heights their observations were sometimes interrupted by unconsciousness owing to near suffocation. Occasionally a balloonist died.

A French meteorologist, Teisserenc de Bort, devised a way to get such weather observations without going up. He tied recording instruments onto a balloon of moderate size and sent them up, trusting to their being found and returned. A little later, at the World's Fair in St. Louis, 1904, Rotch and Clayton of Blue Hill Observatory sent up many of these sounding balloons, and 97 per cent were recovered. One of these was eaten by a cow whose irate owner smashed the instrument as the cow died. Rarely a balloon meets a fate such as this.

Sounding balloons with extraordinarily light apparatus devised by Ferguson can now be sent up at reasonable expense. The records scratched on smoked cylinders tell of temperature and humidity conditions to heights far above the limits reached by manned balloons. Instead of records to heights of 3 to 6 miles these balloons show temperatures to altitudes of 10 or 20 miles. The air grows colder and colder by about 15 degrees Fahrenheit per mile, up to 6 or 8 miles, but above this height the temperature usually remains relatively constant at about 60 or 70 degrees below zero. What conditions obtain at very great heights meteorologists hope to learn with Goddard's rocket.

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(Tomorrow: Fall Frosts)

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