WEATHER NOTE—"A DISTRIBUTION OF ICICLES"

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On March 9, 1989 at 8:05 a.m., a series of icicles which had formed on a railing were photographed. The icicles formed as water from melting snow from the roof and gutter of the Cook College, Rutgers University meteorology department building, fell to the railing below and refroze. A steady northeasterly wind prevailed at the time of formation allowing the water to fall at an angle and permitting it to strike the rail directly and freeze. The phenomenon has been observed several times in the past, but occurs only when the specific conditions of roof snow melt, subfreezing air temperature, correct wind speed and direction and a leaky rain gutter seam are met.

Eighteen icicles were counted at the time of the photograph shown, although only twelve are clearly visible. A few icicles were apparently "missing" and had either been broken off or melted. Eleven icicles formed to the left of the longest one and six to its right. The longest icicle measured 9.2 inches, the shortest 0.2 inches. The distribution spanned a distance of 17.6 inches. The mean length and standard deviation were both 2.9 inches.

As a first approximation, the series of icicles appeared to suggest a quasi-normal distribution with a negative skew, but statistical analysis showed it to be more like a lognormal distribution. The skew observed in the icicles is related to the wind direction and speed at the time of formation and the slope of the railing on which they formed. It is reasonable to assume that several observations of the phenomenon, which would increase sample size, could lead to a more normal distribution as predicted by sampling theory and the Central Limit Theorem.

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