

probably as a hawk at a half a mile, but at 3000 feet would appear as only a dot invisible a short distance farther away. The distance visibility of other birds can be estimated by similar procedure. A broad-winged bird is better visible than one with narrow wings, a perching bird with a rounded profile better than one with a long narrow outline; a flat view of the extended wings better than an oblique aspect. Looking toward the source of light, as the sun, diminishes the visibility by halation, and by glare into the eyes.

When estimating the vertical heights of birds it is remembered, according to the sine of the angle of elevation, that with an angle of 19 degrees the height is approximately one third the hypotenuse; with 30° it is one half; 48°, three fourths; with 54°, eight tenths, and with an angle of 65° the vertical height is 90 per cent of the oblique visual distance. These ratios with the estimated visual distances permit a close estimate of the distances a bird is flying above the ground.

This research is not a consideration of the *recognition* of distant birds, which depends in addition upon relative shapes, flight actions, perching positions, habits and other factors.—HAROLD B. WOOD, M.D., 3016 North 2d St., Harrisburg, Pa.

**Hailstorms and Avian Mortality.**—A violent hailstorm occurred at Ithaca, New York, on May 19, 1936. The storm, which lasted from 12.45 to 1 p. m., was accompanied by high winds and rain. A half hour after the storm, hailstones as large as marbles were lying several inches deep in small gullies and depressions. During the storm, one of my students, Daniel Embody, picked up a Flicker (*Colaptes auratus*) lying on the local golf course. The bird was warm; the extended tongue hung an inch from the bill. It was quite apparent that the Flicker had been killed by hailstones. Embody saw another Flicker lying along the roadside. A thorough search by the writer and four students a few minutes later in this same neighborhood failed to locate this second bird. It had apparently not received a fatal blow. No other casualties were noted, although a search was made. The Flicker was carefully skinned. A bruise on the right thigh and two clots on the skull indicated where the bird had been struck by the hail. The gullet and stomach contained about sixty ants (*Lasius* sp.) and eleven seeds of staghorn sumach. Evidently the bird had been feeding at the time of death. It was a male and weighed 140 grams.

On July 3, 1936, press reports described a slashing wind, hail and rainstorm at Rome, New York. Hailstones larger than marbles lay in streets four to six inches deep in places an hour after the storm. A number of birds were reported to have been killed by these hailstones.

Gates (Science, n.s., vol. 78, pp. 263-264, 1933) has recorded high mortality among birds, especially Scarlet Tanagers and Bob-white, at Baton Rouge, Louisiana, during a severe hailstorm on April 20, 1933.—WM. J. HAMILTON, JR., Cornell University, Ithaca, N. Y.

**Notes from northern Idaho.**—The unusual abundance of certain species of birds in the vicinity of St. Maries, Benewah County, Idaho, during the past summer is worthy of comment.

**LITTLE FLYCATCHER, *Empidonax traillii brewsteri*.**—While by no means rare, this species is always associated in my mind with the edges of alpine meadows and willow-bordered streams at high altitudes in the mountains. During the latter part of last May and to some extent throughout the early summer, they were to be found in almost every willow thicket in this locality. Even in the semi-arid "Palouse Country" and the lower Clearwater Valley they were occasionally met with. On two different occasions in late May I noted a pair in a single clump of willows sur-