

much difficulty in the open air. The observations of most of these naturalists were made in the Central and Southern States, where even in summer the nights are of considerable length. In our northern latitude, on the other hand, the short duration of the hours of darkness at this season compels the birds to seek more promptly the rest so much needed after the incessant activities of the long bright day.

At this hour the inside of the ventilating shaft is too dark to permit one to see anything of its occupants, but on the 20th of May last I was fortunate enough to find them almost all at home in the daytime. The weather was cold with a light rain, and, as the swifts are very susceptible to a fall in the temperature, only a few score ventured out to circle round the building or take a short turn over the city. Entering one of the ducts through a trapdoor in the attic, a journey of a few feet on the hands and knees was well repaid by the view within the shaft. The tower is an octagonal one, built of stone lined with bricks, the space within being about 8 feet across. Up through the centre passes an iron smoke-pipe from the furnaces in the basement. This is about 3 feet in diameter, so that the intervening space leaves ample room for a view of the wall lighted by the little windows at the top where the swifts find entrance. All round the inside the birds were clinging against the wall, shoulder to shoulder, covering every available inch from a short distance below the windows down to about 10 feet above my head, a space of probably 18 feet in height. Many were continually fluttering in and out, knocking each other off and beating about in the dim light with endless flapping and twittering. The wall surface covered would be about 470 square feet. Audubon in making a rough computation of the number of a flock roosting within a hollow tree which he visited near Louisville, Ky., allows 32 birds as the number resting on each square foot of surface. At this rate the census of the Ottawa colony would reach 15,040. I believe, however, that this is considerably over the mark. On several evenings I took the time occupied by the flock in entering the tower, which proved to be about 16 minutes. If there were as many as 15,000, it would require something over 15 birds to pass in during each second. The opening is a small one, about 1 foot by 3, and it seems hardly possibly that they can crowd in at such a rate, though they certainly go faster than one can count. Probably 9,000