

with 2 fresh eggs. On July 14 still another nest was located, this one having 4 eggs. At this late date males were singing everywhere and the time was undoubtedly one of general breeding. From these records it will be seen that there is a nesting period of at least four months, also that the birds rear three and perhaps four broods in a season. It is interesting to relate that while the birds do not, as a general rule, rear two families in the same nest, one pair did so, while another couple built a second nest within a few feet of the first. One nest, under close observation, contained young which left it in nine days after hatching, and though they were still unable to fly at that time they had, nevertheless, acquired considerable feathering. The nest to which I devoted most attention was situated quite close to the house and within easy vision from a window; it was built among chips and sunken, as usual, in the ground, the locality being one frequented by humans as well as by dogs and poultry. When either of the first two drew near, the brooding bird slipped quietly from the nest, apparently trusting to the color similarity of the young and the nest to the surroundings to keep them from harm, but when a hen came within reach the small bird flew at her with such vigor as to cause the hen to become seriously alarmed and make her leave in a hurry.

The young birds were attended by both parents from the time they were hatched until they left the nest and both adults took an equal share in feeding their offspring, as well as cleaning the nest. As it began to grow dark the female fitted herself over the young for the night while the male after singing in the twilight went to rest in the vicinity.

Judging from the observations made in 1918, it would seem that the food of young prairie horned-larks consists very largely of cutworms which the parent birds dig out of the ground by aid of their beaks. The locating of these insects is performed with remarkable accuracy though it is due to a knowledge of the insects' haunts rather than to a perception of the exact situation in which they rest. Thus, parent horned-larks were seen, repeatedly, searching around clumps of weeds which were more or less isolated through being surrounded by bare spots, these being the situations which our observation have shown are most frequented by cutworms. The time occupied in securing one of those insects naturally varied, but on an average required rather less than four minutes. A pair of birds watched on June 4, feeding young a week old, and commencing at sunset, visited the nest with food on an average every two minutes. Judging from these and other observations we can, therefore, estimate the total number of cutworms consumed in a day at fully 400; in other words, nearly 3,000 a week, and

this does not take into consideration the number of insects eaten by the adults which would add considerably to the total.

Cutworm hunting is naturally a daylight occupation and since it continues until dark there is every reason to suspect that it commences soon after dawn, especially as the male birds begin to sing at the first indication of returning day. The birds I had under observation abandoned their work as the day grew dark.

A few mornings after the records mentioned above were taken, I found the young still in position in the nest, but at 8 a.m. the largest and oldest nestling followed its mother away and was soon after lost in the herbage, neither birds being seen again. The male continued to feed the remaining two until five minutes after nine, when the next largest followed him away. The third nestling was smaller than the others and I fully expected that it would be left to perish as often happens when food is scarce. For a time the male continued to devote all his attention to the one that had followed him but eventually he returned to the nest with a cutworm and shortly after with yet another. Feeling sorry for the hard worked little bird I placed five full sized cutworms on the edge of the nest and then awaited developments. The male soon returned with the usual fare, and then spying the insects placed near, he stuffed four of them in succession down the throat of his greedy charge, taking the last grub to the other bird. He continued to labor on behalf of both young until shortly after eleven o'clock when the remaining nestling followed him away.

The habit of the male bird continuing to support both young after the female had evidently deserted them is naturally a very important characteristic providing it is one that is generally followed. The question remains, would he have attempted to do so had food been scarce? The evidence is in the negative. It is common knowledge to those who have studied horned-larks that they seldom rear more than one of the first brood, the reason for this is apparently the scarcity of insect food at that time, especially the scarcity of cutworms. During June cutworms are at the height of their season and, therefore, the birds find little difficulty in rearing the full allotment of young. July is also a favorable month owing to the presence of locusts and caterpillars of various kinds.

The food of adult horned-larks is less insectivorous than is that of the young and is at least in part made up of seeds and sprouted plants of various kinds, but from the fact that enormous flocks of these birds sometimes continue on the grain fields for two or three weeks in spring time without doing