

to think that they were too numerous about there ; that I did not care particularly for any more birds that day ; so started for the wagon, and drove back to town.

From this day's hunt I made good skins of thirteen Gambel's Partridge, two Chapparral Cock, one Mexican Goshawk, one Long-eared Owl, three Abert's Towhee, one Lucy's Warbler, one Pileolated Warbler, two Orange crowned Warblers, two Gila and one Baird's Woodpecker, three Phainopepla, two Texan Nighthawk, two Crissal Thrasher, three Rough-winged Swallow, and one Plumbeous Gnatcatcher ; also the Gila monster. Besides I had several sets of very desirable eggs. Back at four o'clock. A bath is first in order to get off some of the dust and sand ; then I measure and tag my specimens, work at skinning till past midnight, and finish the job in the morning.

Such is a partial account of a short collecting trip to this desert valley ; and if any reader chooses to try it he may be sure of plenty of specimens, with much to please, interest, and instruct, and so much that is strange, weird, and seemingly unnatural ; but the accomodations are sure to be of the poorest, and I fear he may find some things disappointing, unpleasant, and postively annoying.

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### THE PRAIRIE HORNED LARK.

(*Otocoris alpestris praticola.*)

LYNDS JONES.

More than a year ago\* we began to tell the life history of the prairie form of *Otocoris*, promising to complete it another time. The seasons that have intervened have afforded us opportunity for further study, and we feel sure that no one will be the loser from the delay.

The present paper is concerned only with the courtship and nesting habits of these larks, leaving them when the summer moult begins.

Even in January, when the bright, warm sun has eaten holes in Winter's mantle, and the buds on the more for-

\* *Semi-Annual*, Vol. II, No. 2, July, 1890, p. 27.

ward trees begin to swell, *Otocoris* becomes restless. As the warm spring days multiply, his "fancy lightly turns to thoughts of love."

Watch him as he sits on some elevated clod, uttering his peculiar little rattling song, and then darts away like a flash of light, you know not where nor for what. He has not gone far when up starts his intended mate, keeping just out of his reach; now rushing straight ahead, now turning suddenly aside; now up, now down, instantly followed by the ardent suitor. Soon she alights so suddenly that he passes completely over and beyond her, but wheels about and settles, fluttering and singing with all his might, at her side. Coyly she sidles off and feigns indifference, pretending to be feeding. The suitor becomes almost frantic; with drooping wings and elevated head he displays his yellow throat above the black crescent, with comical art, fairly singing his soul away meanwhile.

The object of his affections is still provokingly indifferent. Vexed beyond endurance he springs up and dashes towards her. Away she darts like the wind, just at the moment when you expect a terrible collision! Then the chase begins again. Over and over the ardent suitor and the coy female play their parts, until she finally receives the attentions and caresses which are lavished upon her. Nor does love-making with the larks cease when the prize is won, but continues throughout the spring days, well into the summer months.

Often a second suitor appears upon the scene. Then the courtship just described is multiplied by two! The intervals between the mad chase are filled by challenges and feints of battle. If, after the proper time has passed, the female shows no preference, the issue rests upon a battle between the suitors. It is always short and decisive. The first suitor wins.

Unless the mate of the previous summer has been killed he is always the first and successful suitor. If he does not appear, two young fellows vie with each other for the first position in the affections of the female. If both appear at the

same time she usually shows a preference ; but if she does not, a battle decides it. Females of the previous season, only a year old, who have not before had suitors, are often sought by old mates who have lost their mates or been unsuccessful in their love affairs. Usually such females show a preference. In any case a battle is the court of final appeal.

It may be asked if there are not sometimes more females than males. I have always found it to be the other way. If a female loses her mate she at once seeks another and always finds him !

No sooner is courtship over than the business of the household begins. Accompanied by her mate, the female selects a nesting place. Usually a location not many feet from a road or foot-path is chosen. Often, perhaps in the majority of cases, a gently sloping side hill is chosen ; but I have found a great many nests on bottom-lands, and a very few on the hill-tops.

The location chosen, both birds set to work to hollow out a little space about three inches deep at the foot of a tuft of grass or some elevation to serve as a slight protection, but not large enough to be conspicuous ; rather to divert than to draw attention.

In this slight hollow a scanty supply of fine, dry grass is arranged, the rim of the nest just appearing above the surface of the ground. But the material used is not always grass. If the nest is in a cornfield, the dry husks and leaves of corn are laid next the earth, with a lining of soft corn-silks above.

The general makeup of the nest differs at different times of the year. It is well known that the Horned Larks rear two or even three broods in a season. The first nest, which is made in February or March, would very naturally be more elaborate and warmer, while those made in July would be very slight. A nest is never used twice.

How long does it take a pair of larks to build a nest ? That depends upon the weather, whether material is plenty, and whether they are in a hurry to begin house-keeping. A

week is ample time in which to build a nest. I have seen them built in two days. Wet or stormy weather is very unfavorable, since the nest must be on the ground. It is not seldom that a nest is completed some days before any eggs are deposited. And on the other hand, it is not very unusual to find single eggs which have been dropped because no nest was ready to receive them.

In fair weather, as soon as laying begins, an egg is deposited each day ; but if a cold storm should occur before the set is completed, a day or even two, in extreme cases, may intervene between the times of depositing two eggs successively.

Early in the season four eggs make a complete set, though three are often found. Later, when warm weather is coming on, only three, seldom four are laid. Nests in July often contain only two. At any time of year four eggs is the largest number laid.

The eggs are usually elongate ovate in form, sometimes being even a short ovate; and resemble somewhat, in color and markings, eggs of the Brown Thrasher. But there is always a certain difference, difficult to define. In color they are grayish white, never greenish, as is the case with Brown Thrasher not infrequently. The normal egg is spotted and blotched pretty evenly over the entire surface with brown of different shades, giving the impression of heavy markings. Often the markings are so heavy as almost to hide the ground color. In a few instances I have found eggs with a distinct wreath about the larger end, but the remainder of the egg was marked as usual with browns, the wreath being simply confluent blotches and spots.

In size the eggs range from .80 x .60 to .94 x .67. The average egg is .86 x .63.

Setting does not always begin immediately upon the completion of the set of eggs. Frequently, especially in fair warm weather, the birds take a holiday before settling down to real business. The female incubates, being supplied with food by the ever attentive male. After studying

the habits of the larks during this period of incubation, I have arrived at the conclusion that they are more than ordinarily intelligent.

When you approach a nest the male utters his usual call from his watch-tower, giving a peculiar inflection to the last note. He is nowhere near the nest, by the way, and always happens to be in the same direction from the nest that you are. If you are searching for the nest you must now look sharp. As soon as the female hears that note she steps from the nest and walks quietly away, feeding as she goes. You may be on the opposite side hill from the nest when she leaves it; in which case you won't be very likely to find it. But if your eyes are good you may be able to catch sight of the female as she feeds. If you do, sit down and watch her, taking care to remain perfectly motionless. If you wait long enough, and the bird isn't too shy, you may be able to see her return to her nest.

If you should be so fortunate as to flush the bird from the nest, unless you were familiar with the habits of the birds, you would not know it. Casual observers of birds speak in glowing phrases of the art and maternal affection exhibited by the mother bird who leaves the nest fluttering and crying as though injured, trying thus to lead you away from her nest. But look at this lark. As she suddenly finds you almost upon her she quietly steps from her nest, runs a little way, feeds unconcernedly, and finally flits away easily and calmly as you approach. Which is the more commendable art?

After careful study of a large number of nests, I found that the average period of incubation of our form of the Horned Lark is thirteen days. The conditions may be such that the bird may sit a day or two more or less. I doubt if any eggs are hatched in less than twelve days, and very few in less than thirteen.

The newly hatched young, which break the shell and come forth in exactly the same order that the eggs were laid, are covered with dirty gray down. This thickens as the days pass, and in about ten days the feathers have

well started. The down does not at once disappear, but persists after the feathers are well grown, sticking out between them in little tufts, giving the young bird a very comical appearance. Not longer than fifteen days after hatching, the young leave the nest and begin to "dig" for themselves.

It is exceedingly difficult to trace the life history of the larks after the nest is deserted. All that I have been able to discover is that in a remarkably short time the young become able to catch insects for themselves; when the old birds at once begin building another nest.

Not until late in August, after the birds of the last brood are well grown, is there a time for rest. Then the moult begins, and the birds seem to disappear.

### THE AVI-FAUNA OF BROOME COUNTY, N. Y.

BY WILLARD N. CLUTE, BINGHAMPTON, N. Y.

In presenting the following list of the birds of Broome County, N. Y., it may be well to add a few notes on the position and topography of the section under review. Broome is one of the counties forming the "Southern Tier" of the State, and is situated near the centre of this tier. Its southern boundary is the state line—parallel  $42^{\circ}$ . There are no mountains in the county, the highest points being about 1700 feet above sea-level. It is watered by the Susquehanna and Chenango rivers and several minor streams. As there are no lakes or ponds of any size, we have but few water-birds. The chief waterway of the county—the Susquehanna—which, in part of its course, forms a natural highway for the migratory birds, here flows east and west, and many of the rare migrants have, doubtless, left it for a more direct route northward. The list given herewith is the result of six years' observations and makes no pretensions to completeness. The nomenclature is that of the American Ornithologists' Union. Except in a few instances, I have given the common name by which the bird is best known in the county.

1. **Urinator imber.** Loon.—Occasional migrant.