FAILURE OF HORNED LARKS TO NEST IN MARCH

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DURING the years of 1938, 1939, 1940 and 1941 I have made an extensive study of the Horned Larks, *Otocoris alpestris*, which occur in Ithaca, Tompkins County, New York. Since this bird was studied thoroughly by Gayle B. Pickwell (1931), I concentrated my attention on matters which he treated lightly or where my own observations conflicted with his. A phase of the study which I found of great interest was the failure of the birds to nest in March, when Pickwell (1931) says that they nest, "as a rule, in March." And Sutton (1927) found mated pairs in Pennsylvania as early as February 20.

During the four years of observation I found not only that the birds were not nesting in March, but that they showed very little evidence of sexual maturity. A large number of females collected during this time showed only a negligible enlargement of the ovaries, and the bellies, which in birds ready for nesting should be swollen and bare, was, as a rule, still lightly feathered. Of course, some individuals had larger ovaries than others, but only one female, collected on March 18, 1938, had the gonads decidedly enlarged. But even in this case the brood patch was not swollen and the follicles were only one fourth the size that should be in breeding birds. In 1940 it was not until April that females showed an approach to maturity. On the other hand, males collected as early as February had the gonads rather large. Testes of birds from this month measured from 3 to 5 mm., and one bird collected in February, 1938 measured 6.5 mm. Gonads of March males from 1939 measured, as an average, only 5 mm., showing that they were in no condition for nesting. Males and females collected late in March, 1940 and 1941 had even less enlarged gonads. Sexually matured males taken in late April and June had tests which measured from 10 to 15 mm.

Of more than one hundred females trapped in March of 1940 and 1941, not a single bird had a brood patch well defined. It appears from this evidence that there was a failure of sexual maturity in these birds during the four years of observation.

One may venture to guess, since they have been known to nest in March on previous years, that this failure might have been caused by the severity of the weather, or, by the inadequacy of the environment for breeding caused by weather conditions. Even if the birds had wanted to breed there was hardly any ground available which would have been suitable for nesting sites. March snows during the past four years have been very heavy and consistent.

As the snows melted and conditions for nesting became more

favorable, there was a marked rapidity in the sexual maturity of both sexes. This was noticed particularly in the end of March of 1938 and 1939 and the end of the first week of April of 1940. On April 6, 1940 a pair was taken near their freshly begun nest, which at that time consisted of only a scrape lined with a few lichens. However, the ovary of this female was not yet fully enlarged.

In my work with *Otocoris alpestris praticola*, I trapped male birds which, from their bright yellow superciliary line appeared to be *O. a. alpestris*. However, I was able to distinquish these specimens as *praticola* not only by their smaller measurements and duller dorsal coloration, but also by the fact that their gonads were very much enlarged. Specimens of *O. a. alpestris* taken as late as March 13, the usual date of their disappearance, show hardly a trace of enlargement of the gonads. Not a single specimen collected had the testes larger than 2 mm. The ovary of one March female, although minutely larger than the winter dormant gonad, showed hardly any obvious change.

LITERATURE CITED

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