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WHAT COLOR IS THE EYE OF A BUSH-TIT?

WITH ONE SET OF SIX ILLUSTRATIONS

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BIRD BANDING offers an excellent opportunity for close observation of many individual birds. The following is offered as one bit of information which has come to us as incidental to our bird banding work. The fact, which was new to us, is that some Bush-tits (*Psaltriparus minimus*) have light, almost white, eyes and others of the same flock have dark brown, almost black eyes. The pupil of the eye in both cases is, of course, black.

On October 23, 1926, we caught our first two Bush-tits, both in the same trap at the same time. The first one to be banded had light eyes. That did not excite any particular curiosity on our part because they are such tiny, fidgety things in the bush that it would not be strange if the color of the eyes were overlooked. So that one was banded and released before the other was taken in hand. This second one had dark brown eyes. Then we were puzzled. Which one was a Bush-tit? We were sure when each was in hand that it was a Bush-tit, but had we observed the first one carefully enough? Neither the books at hand nor inquiries gave us help. We waited.

On July 4, 1927, we caught three, all having light eyes, and on July 10 we began the day with seven together in one two-compartment Potter trap which was elevated on a stand pipe so that water dripped into a shallow vessel in the trap. We were careful to hold these birds until they could all be examined and photographed. Four had light eyes and three dark brown. The plumage of all those with light eyes showed no wear even when examined, on the bird, with a small hand lens. That of one brown-eyed bird showed distinct wear. On the second we could not see wear and the third escaped before we could make a careful examination of the feathers.

Figure 51 shows three of the light-eyed birds in the left hand column and two with dark eyes in the right hand column, the top and middle pictures of this column being two views of the same bird.

On July 15 one of the light-eyed birds banded on the 10th and a new brown-eyed one were trapped. On July 18 two were caught, one having dark brown eyes and rump feathers that showed wear under the microscope and the other having light brown eyes which were distinctly different from the whitish eyes of some of those previously captured. The rump feathers taken from the latter were lost before being examined under the microscope.

On July 27 seven were again caught in one trap at the same time. Two of these were repeats from July 4 and 10, respectively, and their eyes appeared as previously with the possible exception that those of the one banded on July 4 had become more yellow. They were recorded as "light" on July 4 and as "yellowish" on July 27, this latter term being used on that day to differentiate them from the ordinary light ones



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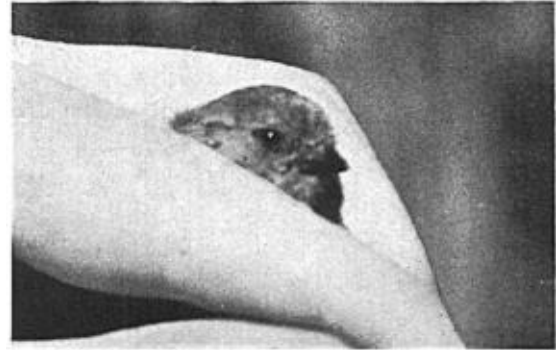
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Fig. 51. BUSH-TITS: THOSE ON RIGHT WITH DARK EYES; THOSE ON LEFT WITH LIGHT EYES. BAND NUMBERS SHOWN UNDER EACH PICTURE.

which were almost white. Of the five new ones two had dark brown eyes, one light and one yellowish. All seven were in various degrees of molt. Of the one having light eyes our notes say: "Only five tail feathers; new ones coming in; some feathers worn."

On July 29 another was caught having light brown eyes. It was molting. On August 17 one with dark brown eyes was caught. It was molting. In the tail the two extreme feathers on the right and the one extreme feather on the left were old, all the rest being new.

A summation of these records shows nine with light eyes, two with yellowish eyes (one of these was first recorded as having light eyes and was counted in the nine), two with light brown eyes, and nine with dark brown eyes. With only one exception, those observed to have worn plumage also had dark eyes. The one light-eyed bird observed to have worn plumage was captured on July 27 when its feathers might easily have shown wear even though it were a bird of the year.

It may be that this difference of eye color is a sex difference but we are inclined to advance the theory that the birds of the year have light eyes and the adults have dark eyes, with intermediate stages of yellowish and light brown. However, we do not consider that our observations of the plumage are sufficient to prove this theory.

An extended search of bird literature has yielded only three references to the color of the Bush-tit's eyes. Dawson in "Birds of California", under both the Coast Bush-tit and the Lead-colored Bush-tit, says of the "adult in fresh fall plumage", "iris light yellow". Florence A. Merriam in "A-Birding on a Bronco" says of one of them, ". . . a comical look of surprise came into his yellow eyes" Hoffmann in "Birds of the Pacific States", in describing the Wren-tit, makes a distinction between it and the Bush-tit by saying, after speaking of the "glaring white eye" of the former, "The Bush-tit . . . has a black eye"

In addition to the above references to published works, Mr. Law's notes on a Lead-colored Bush-tit collected in Arizona read, "iris dark at death". This appeared to be an immature bird because of the lack of development of its sex organs.

If someone knows which Bush-tits have light eyes and which dark, many bird students will welcome the information.

Note.—When the above was submitted to THE CONDOR, Dr. Grinnell called our attention to "Animal Life in the Yosemite" (page 580), where Grinnell and Storer say: "Certain individual Bush-tits have the iris of the eye white though in the majority of the birds it is dark-colored. This is a peculiarity which does not seem to be correlated with age, sex, or season." This statement was based on a considerable series of birds in which age was determined by character of the skull.

Pasadena, California, September 23, 1927.