

GENERAL NOTES

Replaced primaries in first nuptial plumage of *Passerina cyanea*.

—Dwight pointed out (1900, p. 211 *et seq.*) long ago that the Indigo Bunting replaces some outer primaries at the postjuvinal molt. These replaced primaries (in the male) have blue outer vanes contrasting sharply with the blackish outer vanes of the juvenal primaries, except that primary 9 has a black outer vane in each plumage, that is, juvenal and first winter. I have noted the number of replaced primaries in 17 males in first nuptial plumage. This plumage is easily identified by other characters given by Dwight. He does not go beyond saying that 5 or 6 primaries are replaced.

I find all the birds had replaced primaries 6 to 9, of those 13 (76%) had also replaced primary 5 and of these latter 5 (62%) had replaced primary 4.

The statistical situation is interesting. Regard the percentages having replaced 4, 5, or 6 primaries respectively, namely 23, 47, 29. This suggests the Bernoulli (polynomial) distribution, which is an appropriate distribution where a variable may take only a small number of *integral* values. In the present case the chi-square test shows that the odds are slightly in favor of the observed values differing from the Bernoulli distribution (25, 50, 25) only by chance. It can be shown (see *e.g.* Moroney 1951, p. 127) that the Bernoulli distribution is a first approximation to the Gaussian (normal) distribution.

If we adopt the view of the previous paragraph, we can estimate the percentage of first-year males which may replace either three or seven primaries. The pertinent Bernoulli distribution is the coefficients of the expansion of $(a + b)^4$. We now compute a standard deviation as though this was a Gaussian distribution and find the corresponding Gaussian ordinates. As would be expected, the two distributions are very similar as Table I shows. On the average just under one bird in 17 should replace either three or seven primaries.

TABLE I. COMPARISON OF BERNOULLI AND GAUSSIAN DISTRIBUTIONS FOR REPLACEMENT OF THREE TO SEVEN PRIMARIES

| No. primaries replaced | Cases per 100 birds | |
|------------------------|---------------------|----------|
| | Bernoulli | Gaussian |
| 3 or 7 | 6 | 5.4 |
| 4 or 6 | 25 | 24.3 |
| 5 | 37 | 40.0 |

REFERENCES

- DWIGHT, JONATHAN, JR. 1900. The sequence of plumages and moults of the passerine birds of New York. *An. N. Y. Acad. Sci.*, **13**: 73-360, illus.
 MORONEY, M. J. 1951. Facts from Figures. Pelican, ix + 472, illus.

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Some Early Applications for Bird Collecting in Massachusetts.—Between the years 1882-1889, Frederic Ward Putnam served on the Commission of Inland Fish and Game in the State of Massachusetts. During that time he made arrangements for a number of permits for the collection of wildlife granted by this state agency. In making a study of the papers of Dr. Putnam, I have encountered a number of applications for collecting birds for scientific purposes. One received from Arthur Cleveland Bent has already been published (*Bird-Banding* **35**: 121-122. 1964). Several others of special interest are given here.

Spencer Fullerton Baird, Secretary of the Smithsonian Institution at Washington, D. C., wrote to Putnam 21 January 1887, cautioning him against granting an excessive number of permits in areas where harm might result to the breeding birds, "I should think the fewer of such licences that are given out the better, particularly in the vicinity of the islands of Vineyard Sound, where the gulls and terns have been in the habit of breeding." On 10 June 1887 the Reverend T. S. Smith of Northampton, Massachusetts, wrote to Putnam, "I am a missionary of the American Board to Ceylon. I am in this country on furlough and am anxious

to collect specimens of the skins of American birds to take out for the collection of our Training School—Will you kindly send me a licence.” Dr. Putnam sent a permit to collect birds over a period of four months.

William Brewster, noted ornithologist at the Museum of Comparative Zoology at Cambridge, sent a special request in February of 1888 writing, “I want a few crossbills and I am told that they are here in unusual numbers. You know how very erratic their movements are! All may be gone in the course of the next week or two. If you could give me a permit within a few days I should be very glad to have it.” A special permit for this was granted by the Commission, as was a similar one given to G. Brown Goode later that year. Goode, Assistant Secretary of the Smithsonian Institution, sent his appreciation to Putnam on 3 December 1888, “I am very much obliged to you for the permit which you have given, enabling us to obtain specimens of the Heath Hen on Martha’s Vineyard. Prof. Shaler and I have been in correspondence in regard to the matter, and I have written this day to Mr. G. W. Evans whom Prof. Shaler recommends as a good man to secure the specimens.”

C. F. Batchelder of Cambridge also applied for the privilege of collecting birds for scientific purposes. He explained to Dr. Putnam on 11 April 1889 that, “for the last 10 years I have been an officer and member of the Council of the Nuttall Ornithological Club, I was one of the founders of the American Ornithologists’ Union of which I am an active member, and I am the associate editor of the *Auk*.—The birds taken would be used for purposes of study. My age is 32.” Putnam was cautious about giving out collecting permits, but was ever anxious to encourage serious students of ornithology and to approve applications for collecting by those who were qualified to carry out professional studies and to collect for museums.—Ralph W. Dexter, Department of Biological Sciences, Kent State University, Kent, Ohio.

CATTLE EGRETS COLOR BANDED

Due to the widespread interest and lack of knowledge surrounding the Cattle Egret, *Ardeola ibis*, the author and his co-workers have banded nearly 2,000 of this species. This season 1,000 were red color banded on the left leg and an aluminum government band was applied to the right tarsus.

It is hoped that all sightings of these color banded birds will be reported whenever they are seen. All of these nestlings were banded within a radius of 15 miles of Charleston, South Carolina. There can be little doubt that a definite age for breeding will be secured from these birds and that they will spread from Canada to South America, and from Mexico into California. Past recoveries have shown this species to be great wanderers and colonizers of new areas.

That they are very adaptable is being fast proved from almost all facets of the species’ life cycle. From timing of nesting, utilization of used nests of other species, feeding at garbage dumps, consumption of substitute foods when pastures are not available, and last but not least, that ability to fill vacuums left by other members of the long-legged waders.

Please report all sightings to T. A. Beckett, III, Magnolia Gardens, Johns Island, S. C.

HERON DISPERSAL STUDY

Dr. Andrew J. Meyerriecks, Department of Zoology, University of South Florida, Tampa, Florida, is currently studying the movements of young herons in Florida. His work is being done in cooperation with the Encephalitis Research Center of Tampa, a division of the State Board of Health. All of the herons and egrets found in the United States breed in Florida and occur in goodly numbers. A fascinating aspect of the life history of herons is that the young ones, newly fledged, engage in dramatic dispersal movements. Strangely enough, detailed information is lacking on the movements of these young herons in Florida and nearby states.

Dr. Meyerriecks is banding each young heron with a standard government aluminum band placed on its right leg, and then the bird has some of its feathers dyed a bright color. Each heronry is assigned a special color code so that observers can tell where the young heron was born. If you see a strangely marked heron or egret of any kind, please send this information to the address below: DATE: PLACE: SPECIES OF HERON (if known): HOW BIRD WAS COL-