

*Polioptila
caerulea*

58-97.91.9 (4)

Poliptila caerulea.

Copy of a letter from Annie L. Warner to Bradford Torrey who says she is a person "in whose caution and knowledge I have great confidence.----- Miss Warner is a teacher and has been doing good work for the birds for some years past".

Salem, Mass.

1897. Dear Mr. Torrey:- I think an experience of mine to-day
May 12. may be worth telling you. In our garden, among the fruit trees I saw a bird which I took for a Ruby-crowned Knight, from its general appearance. I went out to look at it, and was non-plussed at finding it blue instead of olive, with no wing-bars and white outer tail-feathers. I could not imagine what it could be, but a look into Chapman suggested the Blue-gray Gnatcatcher. Still, I never allow myself to expect anything remarkable, so reluctantly decided that my eyes had deceived me. I should have said that the bird soon flew away. A little later, I went upstairs and took another look into the garden, and there was my bird again. This time, I had him under my glass for fully fifteen minutes, and saw every feather, and it was a Blue-gray Gnatcatcher! As all my books indicate that he is rare hereabouts, I thought his presence might interest you.

Only two days ago, I saw my first Virginia Rail, in an alder swamp, so this is a memorable week for me.

Sincerely yours

Salem, May 12, 1897.

Annie L. Warner.

Birds of Toronto, Canada,
by James H. Flaming.
Part II, Land Birds.
Auk, XXIV, Jan. 1907, p. 86.

283. *Poliptila caerulea*. BLUE-GRAY GNATCATCHER.—Three records, a male May 9, 1885, in Mr. Ernest Seton's collection; ¹ a female taken May 5, 1891, by Mr. O. Spanner; ² and a female taken May 10, 1900, by Mr. C. W. Nash.

¹ Auk, II, 1885, 334.

² Transactions of the Canadian Institute, 1891-92, 73.

Second Occurrence of the Blue-Gray Gnatcatcher in Maine.—On the morning of April 18, 1896, while driving past a farm-yard on Cape Elizabeth, about three miles from Portland, I heard the nasal call-note of a Blue-gray Gnatcatcher (*Poliptila caerulea*). In another moment I saw the bird fly from an old oak to an orchard close at hand. Here I watched him at my leisure. He was very active, but not at all shy, coming several times within eight or ten feet of me, constantly calling, often singing, and repeatedly, of course, displaying his characteristic form and colors. There was no bird of any kind with him. An hour later, I drove past the farm-yard again, and found him still in the neighborhood, having simply crossed the highway. He was still entirely alone. I drove within a few feet of him, and watched him for several minutes,—until he again flew off into the orchard.

The weather throughout New England was almost summer-like for a week preceding April 18, and to this fact, perhaps, was due the bird's long journey from the usual haunts of his kind.

The Blue-gray Gnatcatcher has not been seen in Maine before in spring, and has been positively identified in the State but once before.¹—NATHAN CLIFFORD BROWN, *Portland, Me.*

¹ See Bulletin Natl. Orn. Club, V, pp. 236-37.

A NEW BIRD (*Poliptila caerulea*) FOR MAINE.—Two summers ago, while I was sitting on the piazza of my father's house on Cape Elizabeth, a little bluish bird suddenly showed himself in a thicket of alder, cedar, and wild-cherry bushes, not twenty feet distant. Had I been a few degrees farther south, I should have let him go, unchallenged, as a *Poliptila caerulea*. As it was, I could hardly believe my involuntary assumption that he was of this species, and at once had recourse to my gun. I have never quite convinced myself how it was that my usually trusty weapon so utterly annihilated the little stranger. A few pale blue feathers were all that I secured of my specimen, and to this day I have been doubtful whether I might not have killed an example of *Parula americana*.

I have now, however, no doubt that my original identification was the correct one. Not twenty minutes ago, (August 29, 1880,) in the very same thicket, I stood within arm's length of an unquestionable *Poliptila caerulea*. In this case the bird first betrayed himself by his notes,—notes in themselves sufficiently characteristic to indicate their author.

That either of these specimens were reared or had bred in this State, I do not consider probable. It is more likely that they are examples of the curious retrograde migration which is pretty well known to occur along the Atlantic coast in autumn. And color is lent to this assumption by the fact that strong southwesterly winds prevailed along that coast for several days just prior to their occurrence.

Previous numbers of the Bulletin have noted the occurrence of some three or four individuals of this species in each of the three Southern New England States; but Massachusetts has hitherto been the most northern locality attributed to it.—NATHAN CLIFFORD BROWN, *Portland, Maine.* Bull. N. O. C., 5, Oct., 1880, p. 236-237.

A Third Blue-gray Gnatcatcher in Maine.— Late in the afternoon of August 25, 1912, I heard several times near my house on Vaughan Street, Portland, what I believed to be the call-note of the Blue-gray Gnatcatcher (*Poliophtila caerulea caerulea*). It proceeded from the tops of tall elms, bordering the street, where a number of small birds were flitting about, all too far away, however, to be identified by the eye. About six o'clock, the next morning, I again heard the call-note, now coming from an apple tree on my lawn, and I soon got a fair view of its author at close range. After a moment or two he flew to an almost leafless old apple tree on a near-by vacant lot where, as I stood under the tree, I watched him at my leisure, often within six or seven feet. At last, up to this time quite alone, he flew away southward, a hundred yards or so, to a group of elms, cedars and other trees, and was at once lost in a numerous band of bird migrants.

If we are to accept the records¹ literally, only three Gnatcatchers, all told, have made their way to Maine; but to the writer, before whom the three examples have so casually presented themselves,— with a possible fourth not to be overlooked,— it seems likely enough that more than a few others have come and gone unobserved, even in recent years.— NATHAN CLIFFORD BROWN, *Portland, Maine.*

¹ Bull. Nutt. Orn. Club, V, pp. 236-237; Auk, XIII, pp. 264-265.

Auk, XXIX, Oct, 1912 p. 546.

THE BLUE-GRAY GNATCATCHER (*Poliophtila corulea*) IN MASSACHUSETTS. — Through the kindness of Mr. Arthur Smith of Brookline I am enabled to add this species to our list of Massachusetts Birds. On the 18th of November, 1877, he noticed a bird flying about in a small orchard at Chatham (Cape Cod), but was unable to identify it, and failed to procure the specimen. A few days later his friend, Mr. Stephen Decatur, shot a female *P. corulea* in the same locality, which was undoubtedly the same specimen, as Mr. Smith has preserved it and recognizes it as the species seen by himself.

A few specimens have been taken in Rhode Island, though it is but recently that the Gnatcatcher has been recorded as a bird of New England. — RUTHVEN DEANE, Cambridge, Mass.

Bull. N. O. C. 3, Jan., 1878, p. 45.

THE BLUE-GRAY GNATCATCHER (*Poliophtila corulea*) IN MASSACHUSETTS. — Among a number of mounted birds presented to the New England collection of the Boston Society of Natural History by Mr. F. I. C. Swift of Falmouth, Mass., is an adult male specimen of the Blue-gray Gnatcatcher. This is the second record of its occurrence, the first specimen having been taken at Chatham, November, 1877 (Nutt. Bull., III, p. 45). It appears, by the letter of Mr. Swift, that his specimen was taken in the same part of the State one month later. In answer to my letter of inquiry, Mr. Swift writes: "I shot it on the 18th day of December last, in a line of low bushes skirting a fresh-water pond (in Falmouth) which separated the same from an old field thickly studded with pines of several varieties and about ten years' growth. The locality was in a southern exposure, and I think there was no ice at that time on the pond." — T. M. BREWER, Boston, Mass.

Bull. N. O. C. 3, July, 1878, p. 147

Omissions from the list of the Birds of
Bristol County, Mass. by
A. C. Bent, Taunton, Mass.

Another bird, not included in the list, came to my notice several years ago, viz., the Blue-gray Gnatcatcher (*Poliophtila cerulea*).

This is an exceedingly rare bird in this State, and probably only an accidental straggler from the South. A farmer residing at Nippenicket Pond brought me an egg, unquestionably of this species, which he found in a small nest resembling a Flycatcher's, built in the fork of a small fruit tree. His description of the nest and bird, which I was unable to procure, coincided with this species, and I know of no New England egg with which it could be confused. Of course, this is rather poor authority on which to establish a record, still I mention it to show that the species might occasionally be found to breed here. Audubon says he "saw it on the border line of Upper Canada, along the shores of Lake Erie." On Dr. Brewer's authority, it is found in Massachusetts and as far north as the Canada line, and Dr. Coes states its habitat as North to Southern New England.

O. & O. XI. Aug 1886. p. 199

THE BLUE-GRAY GNATCATCHER IN MASSACHUSETTS.—Mr. C. J. Maynard informs me of a fourth specimen for Massachusetts of the Gnatcatcher (*Poliophtila cerulea*), which was taken at Magnolia, Mass., August 27, 1879, by Mr. Outram Bangs. The bird was a young female, and was probably blown north of its usual range by a severe gale, which occurred a few days previous to its capture.—RUTHVEN DEANE, Cambridge, Mass.
Bull. N. O. C. 5, Jan., 1880, p. 47.

Cape Cod, G. S. Miller, Jr.

Poliophtila cerulea.—An adult female was secured on October 9, 1889. The bird was feeding among some small pines not over four feet high, in company with a small flock of *Dendroica coronata*, *Sitta canadensis* and *Spinus tristis*, and is the only one that I have met with on Cape Cod.

Auk, VII, July, 1890, p. 229.

The Blue-gray Gnatcatcher in Massachusetts.—I observed a Gnatcatcher, doubtless the Blue-gray (*Poliophtila cerulea*) at West Manchester, Mass., November 16, 1902. My attention was at first attracted by a new bird note—a nasal *treee*—several times repeated. The bird was flitting about in the top of an apple-tree and gave me a good, though brief opportunity to note his catbird-like form and kinglet-like actions before he flew farther off. He was very active and soon disappeared entirely, but not without having shown me his blue-gray color against the green of a Norway spruce. Messrs. Howe and Allen's list of the 'Birds of Massachusetts,' credits the State with six records for this species—all in the fall (August 27 - December 18). West Manchester is only a few miles from Magnolia, where Mr. Outram Bangs took an immature female, August 27, 1879.—FRANCIS H. ALLEN, Boston, Mass.

Auk, XX, Jan., 1903, p. 69.

The Blue-gray Gnatcatcher in Massachusetts.—A male Blue-gray Gnatcatcher (*Poliophtila cerulea*) was shot at Hyde Park, Mass., on Sept. 22, 1906, by Frank E. Webster of this town. The bird was alone, feeding in a clump of white birches in a yard. It was very lively in its actions, continually flitting about and now and then uttering a little squeaking note. The skin is now in the collection of Mr. John Thayer, Lancaster, Mass.—H. G. Hipes, Hyde Park, Mass.
Auk, 24, Apr., 1907, p. 222.

The Blue-gray Gnatcatcher in the Public Garden, Boston, Mass.—In the early morning of October 22, 1904, which was clear with a light south-westerly wind, following a southeasterly gale of fifty miles an hour along the Middle Atlantic and New England coasts the previous day, I found upon entering our Public Garden in the heart of the city a Blue-gray Gnatcatcher (*Poliophtila carulea*). Immediately upon my entrance his call was heard from a neighboring beech, and being different from any call-note with which I was acquainted,—tiny, nervously given and oft-repeated,—it guided me at once to the presence of the bird. He constantly flitted from one bough to another with even more rapidity than does a kinglet and was of about kinglet size. The clear blue-gray of the entire head and back, the white outer tail-feathers, the drooping of the wings and erectness of the tail at once made his identity clear. He was also engaged in his flittings in catching and eating insects. His companions were Black-poll Warblers and Juncos. From the beech he took flight into a tall sycamore maple and gradually worked down from the top of the tree into the lower branches, where he was seen at very near range and his catching of insects was observed with much interest. The House Sparrows, however, soon began to make trouble for him and at length drove him to a distance, but not before I had spent twenty minutes with this so rare bird in Massachusetts and made good acquaintance with it. I had not observed whether it had a black forehead and black line over the eye, not knowing at the time that these markings differentiate the male from the female, but as the color of the entire upper parts was a conspicuously clear blue-gray, and Cones's 'Key' describes the female as "duller and more grayish above," it was not improbably a male. When I made my usual morning visit to the Public Garden the next day, the Gnatcatcher could not be found. In the 'Birds of Massachusetts,' compiled by Messrs. R. H. Howe, Jr., and G. M. Allen, and issued in 1901, but six records of *Poliophtila carulea* are given, namely: *Chatham*, November 18, 1877; *Falmouth*, December 18, 1877; *Magnolia*, August 27, 1879; *Oster-ville*, September 26, 1879; *Brookline*, September 8, 1887; *Highland Light*, October 9, 1889. In the opinion of Mr. Willam Brewster it is not improbable that the bird may have drifted north before the southerly storm of October 21.—HORACE W. WRIGHT, *Boston, Mass.*,
Auk, *XII*, Jan., 1905, p. 87-88.

A Blue-gray Gnatcatcher in Brookline and Boston, Mass.—On December 3, 1910, when passing through Olmsted Park, lying partly in Boston and partly in Brookline, I came upon an Orange-crowned Warbler (*Vermivora celata celata*) in a planting of shrubbery. It was an unusually brightly plumaged bird, others which I had seen in former seasons having been much more dusky and dull-plumaged. This warbler had just gone from view by taking a short flight out of my range of vision, when another very small bird was seen directly before me, which by coloration, form, and movement I perceived at once to be a Blue-gray Gnatcatcher (*Poliophtila carulea*). The tone of color of the upper parts was a very clear blue-gray, and the nervous switching and erecting of the tail were characteristic movements. I had several good views of the bird both in trees, on shrubs, and on the ground before it passed from sight, when automobile travel intervened. It appeared to be gleaning food of larvæ or insect's eggs from the twigs and remaining leaves. The following day five other observers, associate members of the A. O. U., to whom the knowledge had been given, also saw this bird in the same park a little farther southward. The earliest observer found it still in the company of the Orange-crowned Warbler, but the later group, while seeing the Gnatcatcher, was unable to find the warbler. On December 4 the bird was on the Boston side of the park, having been on the Brookline side when seen by me. In 'The Auk' for January, 1905, p. 87, is a note of my earlier observation of a Blue-gray Gnatcatcher on October 22, 1904, in the Boston Public Garden.—HORACE W. WRIGHT, *Boston, Mass.*

Auk 28, Jan-1911, p. 117-118

Another Occurrence of the Blue-gray Gnatcatcher in Essex County, Massachusetts.— I should like to record a full plumaged Blue-gray Gnatcatcher (*Poliopitila caerulea caerulea*) seen in the pitch pine trees of the Ipswich Dunes on August 24, 1912.

The bird when first seen was flitting about the trees like a Kinglet uttering a curious little call note which at once attracted my attention. I coaxed the bird out on to the lower dead limb of a gray birch by squeaking, so that we were able to observe it carefully for ten or fifteen minutes although it was quite restless.

The bird was seen by Miss E. D. Boardman, Edmund Bridge and myself.
— LIDIAN E. BRIDGE, West Medford, Mass.

Arch. xxix, Oct. 1912. p. 546

Blue-gray Gnatcatcher at Groton, Mass.— On Nov. 19, 1915, a female or immature Blue-gray Gnatcatcher (*Poliopitila c. caerulea*) was found dead on Hollis St., in Groton, Mass., by Master Robert F. Cressey, seven years of age, a member of the local bird club. The specimen is now being mounted for the collection of the Museum Society at Groton School.— WILLIAM P. WHARTON, Groton, Mass.

Arch. xxxi, Jan. 1916. p. 78.

Polioptila caerulea.

For Rhode Island records see

Bull. N. O. C., 2, Jan., 1877, pp.20-21 & p.14.

Notes from New Haven Conn. 9
by E. L. Munson.

September 1, 1885, Mr. Sanford captured a male Blue-gray Gnatcatcher near East Haven, Conn.

Q. & O. XII. Sept. 1887 p. 156

General Notes

Notes from Connecticut.

10.

E. L. Cames, Bridgeport, Conn.

On April 6, at Stratford, the very familiar cries of a Blue-gray Gnatcatcher attracted and held my attention for several minutes, when it passed beyond hearing. Although but a short distance away at first, it was not seen, barriers interfering with approach.

Aug. X, Jan., 1893. p. 89.

NOTICE OF A FEW BIRDS OF RARE OR ACCIDENTAL OCCURRENCE IN NEW ENGLAND.

BY H. A. PURDIE.

THE following data respecting the occurrence of the following fourteen species so far to the northeastward as New England are of special interest. I am indebted to Messrs. Frederic T. Jencks of Providence, R. I., Erwin I. Shores of Suffield, Conn., F. C. Browne of Framingham, Mass., and J. N. Clark of Saybrook, Conn., for facts relating to eleven of the birds here mentioned.

1. Polioptila cærulea. BLUE-GRAY GNATCATCHER. — Mr. Jencks writes: "Two were shot at Wauregan (Windham County), Conn., by Mr. C. M. Carpenter, — a male in 1874 and a female in 1876. Three or four were seen by me at Providence, R. I., May 23, 1875."

A male was also shot, by Mr. Shores, at Silver Spring, near Providence, June 24, 1875, and several others have been seen by him at different times in Providence and vicinity.

Bull. N. O. C. 2, Jan., 1877, p. 20-21.

Distribution of New England Birds. —
▲ Reply to Dr. Brewer. H. A. Purdie.

There is also another bird, namely, the Blue-gray Gnatcatcher (Polioptila cærulea) and the Blue Warbler (Dendroica cerulea), expunged by Dr. Brewer, whose record of occurrence in New England is as good as any just cited, which I am prepared to show has recently been taken in Connecticut and Rhode Island. (See this number of the Bulletin, p. 20.)

Bull. N. O. C. 2, Jan., 1877, p. 77 (change 200)

CAPTURE OF THE BLUE-GRAY GNATCATCHER (*Polioptila caerulea*) IN CONNECTICUT.—A male of this species was killed here May 11, 1883, by a boy with a sling shot, and is now in the cabinet of Mr. Jos. W. Lord. The only previous record for Connecticut that I find is the one given by Linsley (1843), and since quoted by Allen, Merriam, and other writers.—JNO. H. SAGE, *Portland, Conn.* **Bull. N. O. C. 3, July, 1883, p. 179**

Blue-gray Gnatcatcher in Connecticut.

May 7, 1886, Mr. Treat killed a female *Polioptila caerulea* at East Hartford. It was on the top of a high willow. This is, I believe, the third recorded capture of this Gnatcatcher for Connecticut.—JNO. H. SAGE, *Portland, Conn.*

Ank. 3, Oct., 1886. p. 487.

Blue-Gray Gnatcatcher (*Polioptila caerulea*) at West Haven, Conn.—On the morning of April 30, 1914, I observed a Blue-gray Gnatcatcher at West Haven, Conn. The bird was very tame and allowed me to observe it for some time, part of the time from a distance of not more than fifteen feet. Six records of this species in Connecticut are recorded by Sage and Bishop in the "Birds of Connecticut" (page 176). This constitutes the seventh record, and the first since 1892.—ARETAS A. SAUNDERS, *West Haven, Conn.*

Ank. xxxi, July, 1914. p. 402.

Birds Rare or Accidental on Long Island.

2. *Poliophtila caerulea*. BLUE-GRAY GNATCATCHER.—I shot a young bird, October 11, 1879, at Fort Hamilton. It was skipping about in a row of honey-locusts, and was exceedingly active.

Deeds, Berier, Fort Hamilton.

Bull. N. O. C. 6, April, 1881, p. 126.

LONG ISLAND, N. Y., BIRD NOTES.

BY NEWBOLD T. LAWRENCE.

In the following notes, I take pleasure in recording several additional captures to those already mentioned in a list of 'Rare Birds taken on Long Island, N. Y.', published in 'Forest and Stream,' May 2, 1878.

1. *Poliophtila caerulea*. BLUE-GRAY GNATCATCHER.—Shot a female of this species at Far Rockaway, April 18, 1874.

Auk, 2, July, 1886, p. 272.

Poliophtila caerulea.—I shot a male at Montauk Point, Sept. 2, 1885. It was in one of the dense thickets common to that locality, and not in company with any other birds. This is, I believe, the third record for Long Island, the first specimen having been taken by Mr. N. T. Lawrence (Auk, II, July, 1885, p. 272) and the second by Mr. de L. Berier (Bull. N. O. C., VI, April, 1881, p. 126). Up to the present writing I know of no other captures of this species on Long Island, although the list of records for New England is now a large one.—JONATHAN DWIGHT, JR., New York City.

Auk, V, July, 1888, p. 324.

Dutcher, Rare Long Island Birds.

Poliophtila caerulea. BLUE-GRAY GNATCATCHER.—There is but one specimen in the collection, labelled "Shot by J. Akhurst, at Canarsie, in 1849." It is the only specimen that Mr. Akhurst recollects ever having seen from Long Island.

Auk X, July, 1893, p. 277

The Blue-gray Gnatcatcher in New York City.—A Blue-gray Gnatcatcher (*Poliophtila caerulea*) was seen in Central Park, New York City, and positively identified, on May 22, 1901.—C. B. ISHAM, New York City.

Auk, XIX, Jan., 1902, p. 91.

Notes from Western New York.
Maurice C. Blake, Hanover, N. H.

Poliophtila caerulea.—On April 25, 1906, I observed a female Blue-gray Gnatcatcher at Canandaigua. It was occupied in catching insects that were about the blossoms of a maple tree on the edge of a swampy woods. After some time in the upper branches it came down to about eye level and worked along the border of the woods. This gave me an excellent opportunity to observe it well. It moved on gradually in a northerly direction as if migrating, but apparently was not with a flock of migrants. There is one other record for Ontario County.—"Canandaigua, June 3, 1886." Auk, 24, Apr., 1907, p. 226

Washington County, N. Y.

Blue-gray Gnatcatcher (*Poliophtila caerulea*) in Washington County, N. Y.—On Aug. 12, 1908, I collected an adult female of this species, in a swampy tract of woodland, among the hills of Middle Granville, N. Y. I was unable to determine whether the bird had bred in this locality, because the southern migration was well under way at the time.—J. A. WENZEL, Palisades Park, N. J.

Auk 26, Jan. 1909, p. 82-83.

Birds observed in June, July, & Aug. at
Raleigh, N. C. by H. H. & C. S. Brimley.

1881-1885

7. Blue-gray Gnatcatcher, (*Poliophtila caerulea*). Common; first nest of '85 found on May 5th. This little bird is generally known in this neighborhood as "Mossbird," from the structure of its nest.

O. & O. X. Sept. 1885, p. 143

Birds of Western North Carolina.
William Brewster.

98. *Poliophtila caerulea*. BLUE-GRAY GNATCATCHER.—Seen only along the road between Webster and Franklin, and on the outskirts of the latter town, where it was common throughout an extensive tract of post-oak scrub.

Aug. 3, April, 1886, p. 178

1889

Feb 11

Enterprise, Fla.

Poliophtila caerulea 11.

One in trap, very tame. Was a steady by human
team with soft liquid note & low whistling note of the

Birds Observed at Coosada, Alabama
N. C. Brown

10. *Poliophtila caerulea*, (L.) Sel. BLUE-GRAY GNATCATCHER. — Arrived March 25, and soon became very common. They seemed to affect no particular kind of growth, but were everywhere equally abundant. They are most earnest and persevering songsters: in their frequent practice of singing on the wing, they fairly rival the Bobolink's ardor, and had their melodious, "mocking little strain" (as Mr. Brewster has called it) somewhat more volume, it would certainly be an unusually fine performance.

Bull. N. O. C. 3, Oct., 1878, p. 170

Descriptions of First Plumage of Cer-
tain North Am. Bbs. Wm. Brewster.

9. *Falco sparverius*.

First plumage: male (?). Rectrices as in the adult; remiges paler, with a much broader and whiter edging on the tertials; rest of upper parts pale mouse-color with a strong wash of light cinnamon. Entire under parts grayish-white or pale lead-color. In my collection, from Kanawha Co., West Va., June, 1872.

Bull. N.O.C. 3, Jan., 1878, p. 19

1884

Charleston, South Carolina

April 23. Saw a pair at work on a nest about half done. Horizontal branch of tall pine at least forty feet up.

THE BIRD IN THE C. S. BRIMLEY

Blue-gray Gnatcatcher. Set, four or five. I don't know which is the standard, but will find out next year.

O. & O. XVI, Jan. 1891, p. 8

THE BIRD IN THE C. S. BRIMLEY

Blue-gray Gnatcatcher. Sets either four or five, the sets of five being perhaps a little more numerous early in the season, later on sets of four are much more numerous.

O. & O. XVI, Jan. 1891, p. 8

EGGS AT RALEIGH, N. C. 1890
O. S. BRIMLEY

May 1. Blue-gray Gnatcatcher; set of five; twelve feet in willow.

O. & O. XVI, Jan. 1891, p. 10

On a Collection of Eggs from Georgia. H. B. Bailey,

26.

4. *Poliophtila caerulea*. BLUE-GRAY GNATCATCHER. — Nests either saddled on a branch of a tree or in a fork; eggs four or five. A set taken April 30.

Bull. U. S. Geol. Surv. 1889, p. 31

Carver's Nesting Habits of Birds

[I have also observed that when the Blue-gray Gnatcatchers (*Poliophtila caerulea*) are building and a storm partly destroys their nest, they will tear down the old structure and rebuild it again in another tree, using the same material for the new nest.

Plymouth, Mich. James B. Purdy
O. & O. XIV, June 1889 p. 93

Auk, XII, April, 1895, p. 185.

Breeding of the Blue-gray Gnatcatcher in Minnesota. — Until the summer of 1892 this bird was a rare visitor in Minnesota and was not supposed to breed here at all. In the month of April, 1892, several pairs were observed near St. Paul for the first time. In June a nest was found by a local collector and brought to me for identification. The parent being taken with the nest it was easily identified. This find set me to searching for their nests the next season, and I was rewarded with a fine set of five eggs which were taken with the nest and parent in June. That was the only nest observed in 1893. The past summer the birds were much commoner than ever before, and four nests were found, three with eggs. The first nest was taken May 27, and contained four fresh eggs. The second set was taken on June 2, with five slightly incubated eggs. The third, also taken on June 2, contained four fresh eggs. The fourth nest, taken on June 18, contained four young, just hatched, and one addled egg. This is, I believe, the first record of the Gnatcatcher breeding north of 43° N. lat., St. Paul being in lat. 45° N. All the nests, with one exception, were taken in West St. Paul, in Dakota County. They were all placed on horizontal branches of the burr oak and the height varied from twelve to twenty-four feet. — WALTON MITCHELL, St. Paul, Minn.

On May 17th, 1886, I discovered a pair of Blue-gray Gnatcatchers building a nest on a horizontal limb of an oak tree, about thirty feet up. On May 28 I again visited the tree and found the birds had taken their departure, but as the nest appeared to be a very large one I ascended the tree to obtain it, and on examining it I found that a Cowbird had deposited an egg before being occupied by the owners, and that they had put in more lining and covered it entirely over, and had then built up the sides of the nest about three-fourths of an inch higher, but had finally concluded to abandon it, and were found building another nest a few rods from there, which goes to show that they do not willingly submit to the intrusion of the Cowbird.

Goodrich, Mich.

SAMUEL SPICER.

O. & O. XII, Mar 1887, p. 38

Nest of the Blue-Grey Gnatcatcher.*

BY GEO. H. CENTER.

May 18, 1885, I found a nest of this little bird on a limb twelve feet up, on a dead walnut tree, situated on the bank of a small creek. The tree was leafless, the water having washed the earth from its roots so that it almost fell with my weight when I ascended to the nest, which was placed in the fork of the branch so that one limb formed a roof to shelter it. The nest was composed of a coarse moss found on the trees near by, and spider webs, this latter material being wound around the whole nest, together with a few pieces of wool. It was lined with the down found on hickory buds, and a few feathers, together with some very fine dry grass.

There was one egg in the nest when found, which I let remain until May 22d, when I returned and took the nest and five fresh eggs. This time I saw the female on the nest. She was sitting parallel with the limb, as I think she always would, for on the side from the tree there was a low place where she rested her chin which enabled her to sit with more ease, as it would otherwise compel her to keep her head straight up.

The next day I was in the woods at an early hour and saw a pair of these little birds flying from tree to tree, gathering material for their nest. I watched them for some time, and at last saw them fly into the top of an elm. It took some length of time before I could discover them, as

they had evidently just begun house building. I at last saw it on a limb about twenty feet from the ground. I did not trouble them until the 3d of June, when I returned and took the nest with five fresh eggs. The work and material used were precisely like the first, except the nest was smaller, as also were the eggs. Nest number one was two and three-quarters inches in height outside, two inches deep on the upper side, one and one-half inches on the lower; circumference eight and one-quarter inches. Number two measures two and one-quarter inches in height, one and three-quarter inches in depth on the upper, and one and one-quarter inches deep on the lower side; circumference seven and three-quarters inches. O. & O. XI, Feb. 1886, p. 24.

cop No. 3, diaphragms are a in the lens next to the shut-double holders for plates, our pounds complete. Has to take out in case of indoor front board lets down on ring gets out of order it can l. I have wandered often but hope it may have been reader, and may be the others out to give their extensive field of hunting with a noisy gun.

W. Otto Emerson.

35, Cal., Oct., 1889.

Nesting of the Blue-gray Gnat-catcher at Raleigh, N. C.

The Blue-gray Gnat-catcher (*Polioptila coerulesca*) is quite a common summer visitor about here, frequenting the woodlands and orchards, but most abundant in the willows and other growth along streams. This year, as usual, the first specimens appeared the last week in March, and by the 5th of April the species was present in summer numbers.

They did not let the grass grow under their feet when they got here, but after laying out their summer plans and looking up the fashionable localities, they went to work in good earnest. The first nest observed was one just started, on April 12th, and by the 20th the bulk of the species were engaged on their nests. A cold spell lasting five or six days from the 13th to the 18th, set back some of them in their operations, but others kept bravely on with their work in spite of the biting winds. Both sexes helped in the building, the female doing most of the work, however.

Green moss, fine grass, fibres, and other fine material, firmly bound together with cobwebs and ornamented with an exterior coat of gray lichen, are the usual materials employed in making the nest. The actions of the bird when binding cobwebs in a suitable fork to form the foundation are most amusing. The bird sticks her head under the fork, and winds and twists the cobwebs about any projections there may be present, until it looks as if she would twist her head off.

The nest is usually placed in the fork of a moderately slender lateral limb of some tree, and there is also a disposition on the part of the birds to choose a fork near the end of a limb, so that when a good sized tree is chosen

On May 17th, 1886, I discovered a pair of Blue-gray Gnatcatchers building a nest on a horizontal limb of an oak tree.

as a nesting site the eggs are no easy matter to get. The nests are placed in sweet gum, birch, oak, willow, and pine mostly, and range from seven to fifty feet in height, the highest nests being those in pines and the lowest ones those in the gums.

The birds take about two weeks to build the nest and lay the four or five eggs which constitute a set; but after a pair has been robbed once, they take much less time over the second and later nests. When undisturbed I do not think they raise more than one brood in a season. The labors of incubation are shared by both sexes, though I don't know whether the male bird takes his full share of the work, or whether he only goes on the nest once in a while, to show how good he is.

From one pair of birds we took four sets this year, and as a matter of curiosity I give the history thereof:

April 12, 1889. Birds started building in fork of sweet-gum, eight feet high.

April 18. Birds started on the nest again after doing nothing for nearly a week of cold weather.

May 2. Took set of four eggs from nest. Birds found building next day in another sweet-gum, nine feet high this time.

May 14. Took set of four from second nest. Birds started again next day in a third sweet-gum, and put the nest a little higher (twelve feet.)

May 24. Took set of four from third nest. Birds started building again in a fourth sweet-gum. Nest again twelve feet high.

June 1. Nest had three eggs in. Looked later on and it had only two.

June 3. Took set of three from third nest. Some days after, the birds started on their fifth nest, choosing a pine limb some forty feet high and putting the nest a long way from the trunk, and so we concluded to let the bird hatch.

C. S. Brimley.

Raleigh, N. C.
O., & O., XIV, Dec, 1889 p. 181-182.

My Two Pets.

It was a beautiful morning in May when I—and myself started out with the distinct view of making a new acquaintance. We had carefully located our destination several days previous, and judged that it was time for the harvest. A few minutes' walk brought us to the outskirts of the city. At the forks of the roads, in a small pine tree particularly exposed to the view of all who passed, was a

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Nesting of the Blue-gray Gnatcatcher.

It seems strange that such an essentially southern species as the Blue-gray Gnatcatcher (*Polioptila caerulea*) should be so abundant as it is in this locality which is so near the limit of its northern range, if not, indeed, actually marking that limit, at least in this state and the neighboring State of Ohio, where, according to Oliver Davie, it is also quite common. But in Butler and Armstrong Counties, only some forty miles to the eastward of here, it is conspicuous by its absence, a fact in keeping with the boreal affinities of the fauna of which locality, as compared with that of Beaver County.

Its arrival occurs the third week in April, or, to speak more precisely, and by the record, on the 17th or 18th of the month, when pleasant weather has become fairly established and the orchard and forest trees are just beginning to burst into new life. Dry and rather open woods, especially if on a hill-side, are its chosen haunts, in which places the birds, although so small of size, may always be found if present by following up their peculiar filing note, *chee-e-e-chee-e-e-chee-e-e*, which cannot possibly be confounded with any other, although on the whole bearing considerable resemblance to that of the Blue Golden-winged Warbler. But this is a humble effort compared with the Gnatcatcher's true song, for it is possessed of exquisite vocal powers, though they are not often exercised, and not generally known even among professed ornithologists, its song being heard for only a week or two after the bird's arrival. Not so full and clear, indeed, as the vivacious song of its cousin, the Ruby-crowned Kinglet, which expressive, and sweeter, well-befitting such a migratory bird at the same time, but more exquisitely modulated, more tender, more tiny, fairy-like bird, as, clad in a delicate blue and white, it ceaselessly pursues its minute insect prey in the tree-tops, in every motion graceful.

They are invariably paired on their arrival, and lose little time in selecting a nesting-site, which is always in the immediate vicinity of last year's, and not infrequently on the same tree. The spot having been chosen, work on the nest is immediately begun, and rapidly carried forward except in stormy weather, though the structure always requires for its final completion between two and three weeks of constant labor on the part of the female, the male, so far as I have observed, never

assisting, although he always remains near at hand and takes a great interest in the work, aiding no doubt, by his cheery presence and song. The nest is occasionally let down into the crotch of an upright branch, but as a rule is saddled on a horizontal limb, preferably of an oak, at an elevation of from twenty to fifty feet, and is not infrequently so arranged as to be directly under another limb, so as to be partially protected from the disintegrating effect of rain. It is a most elegant and elaborate structure, a very model of bird architecture, and as such very creditable to its tiny owners, whose labor is so patiently expended upon it. Though reminding one strikingly of the nest of the Hummingbird, with which it even vies in elegance of design and beauty of finish, it is much larger, being, in fact, very large in proportion to the size of the bird.

A nest now before me, collected May 19, 1890, and which may be regarded as typical, is composed of the delicate stalks of certain small weeds, fine strips of inner bark, bits of dry mullein leaf, down from the thistle, milkweed, and various other plants, pieces of cocoons, etc. There is no special lining other than the regular material used for the body of the nest, but the outside is completely and neatly stuccoed over with bluish-gray lichens fastened on by a lavish use of cobwebs. The cavity is deeper than it is wide; the brim is moreover much constricted. The birds very often place their nest on a lichen-covered branch, the more to escape observation, but in any case it might readily be mistaken for a knot on the limb, so perfect is the mimicry. It is a soft and perishable structure, loosely attached to its branch, and never outlasting the season for which it is intended. Although it might naturally be supposed that it would be rather difficult to find, this is in reality a very simple and easy matter, as the birds never stray far from home and are always certain to return sooner or later, so that it is only necessary to watch them while building. When the female begins to incubate she every now and then answers the calls of her mate by reassuring notes, thus disclosing the position of her nest. When their domicile is invaded they become very bold and fearless, though so small and insignificant in size, often coming within a yard, scolding and protesting vigorously meanwhile. In a case that came under my notice this last spring, where the female of a pair which had nearly completed their nest was accidentally killed, the male in the course of a few days secured another mate, which built a new nest

*Regulus
Satapa*

Regulus satrapa.

1889

Nov. ^{Co} 7² ^{W²B} 26¹² ^a 30²³ - 1889. ^{Co} 1² ^{Co} 3² ^{Co} 12² ^{Co} 14³ ^{Co} 29² 1890 ^{Co} 6² ^{Co} 8² ^{Co} 11² ^{Co} 12² ^{Co} 23² ^{Co} 24² ^{Co} 28² ^{Co} 29² ^{Co} 30² 1891.

Dec. ^{Co} 1² ^{me} 4² ^{me} 5² ^{me} 6² ^{Co} 7² ^{Co} 13² ^{Co} 23² 1889. ^{Co} 3² ^{Co} 6² ^{Co} 7² ^{Co} 12² ^{Co} 20² 1890 ^{Co} 1² ^{Co} 6² ^{Co} 8² ^{Co} 10² ^{Co} 16² ^{Co} 20² ^{Co} 25² 1891

Jan'y ^{Missy} 26²³ ^{Co} 1890 ^{Co} 23² 1891 ^{Co} 30² (with Chimney) - 1892. ^{Co} 4² ^{Co} 7² ^{Co} 12² ^{Co} 13² ^{Co} 14² ^{Co} 22²

Feb. ^{Co} 5² 1891 ^{Co} 6² ^{Co} 8² ^{Co} 9² ^{Co} 15² 1892. ^{Co} 2²

March ^{Co} 4² ^{Co} 6² ^{Co} 9² 1891 ^{Co} 15²

April ^{Co} 14² ^{Co} 16² 1891 ^{Co} 18² ^{Co} 20² ^{Co} 24² 1892. ^{Co} 14² ^{Co} 17² ^{Co} 21² ^{Co} 29².

1 satrapa

Sept

Oct. ^{Co} 4² ^{Co} 8² ^{Co} 11² ^{Co} 22² ^{Co} 24² ^{Co} 26² ^{Co} 28² ^{Co} 29² 1891. ^{Co} 4² ^{Co} 6² ^{Co} 10² ^{Co} 15² ^{Co} 19² ^{Co} 21² ^{Co} 23² ^{Co} 24² ^{Co} 27² ^{Co} 28² 1892.

Nov. ^{Co} 1² ^{Co} 3² ^{Co} 6² ^{Co} 7² ^{Co} 14² 1892. ^{Co} 1² ^{Co} 7² (Monday Oct.) 1891

Dec. ^{Co} 1² ^{Co} 3² ^{Co} 4² ^{Co} 10² ^{Co} 15² ^{Co} 17² ^{Co} 20² ^{Co} 22² ^{Co} 24²

Seen about five times during the month in my garden, Cambridge.

Regulus satrapa.

September, 23^② 28^② 7^② Concord 1891.

October 18^② Concord 1894 }
 " 9^② 21^② 27^② 31^② } 1895 }
 " 11^② 20^② 21^② 22^② 23^② 24^② 25^② 31^② } 1896 }
 " 23^② 24^② 25^② 29^② Concord 1899 }
 " 22^② 29^② 30^② (white) } 1895 }
 " 7^② 24^② } 1893 }
 " 2^② 4^② 5^② 7^② 8^② 10^② 14^② 17^② 18^② 19^② 20^② 21^② Concord 1897 }
 " 1^② 3^② 9^② 12^② 16^② 21^② Concord 1898 }
 " 4^② 7^② 29^② } 1894 }
 " 8^② 16^② 20^② 23^② } 1895 }
 " 36^② } 1896 }
 " 3^② 8^② 7^② 12^② 19^② } 1899 }

December 4^② 7^② 29^② } 1894 }
 " 8^② 16^② 20^② 23^② } 1895 }
 " 36^② } 1896 }
 " 2^② 5^② 11^② 13^② 20^② } 1894 }
 " 13^② 16^② 26^② 28^② } 1899 }
 " 2^② 5^② 8^② 13^② 28^② } 1898 }
 " 2^② 14^② } 1896 }

January 7^② } 1894 }
 " 7^② 15^② } 1895 }
 " 13^② 16^② 26^② 28^② } 1899 }

February 2^② 14^② } 1896 }

March 3^② } 1895 }
 " 16^② 17^② 18^② 21^② 23^② 24^② 25^② 28^② } 1898 }

April 2^② } 1893 }
 " 3^② 11^② 22^② } 1897 }
 " 2^② 9^② } 1898 }

May 3^② Concord 1898

satrapa

Regulus satrapa.

Winchendon, Mass.

1888. We entered a dense spruce woods where the trees stood so thickly that they shut out nearly every ray of sunlight. The ground beneath was smooth and carpeted with brown needles. Hearing a Kinglet sing we went in pursuit and found a pair, the female of which was collecting material for her nest. In a very few minutes we traced her to it. It was some 40 ft. up in a large, dense spruce near the extremity of a branch under which it hung not unlike a Vireo's nest. Bailey climbed to it and found it nearly finished. Both birds darted into and out of it as soon as he descended.

Regulus satrapa.

Peterborough, New Hampshire.

1898. Abundant in spruce grown pastures and mixed spruce and
July 5 hemlock woods (Ben Mere farm, Cunningham Pond and base of Pack
to
Aug.15. Monadnock). Heard singing July 6, 18 & 20. A brood of eight
or nine young in company with Chickadees and Warblers met
with July 23rd.

Dwight, Summer Birds of
Prince Edward Island.

Regulus satrapa. GOLDEN-CROWNED KINGLET.— Infrequently observed. Young were on the wing the last of June. It should have proved much more abundant than I found it to be.

Auk X, Jan, 1893, p.14

Summer Birds of Bras D'Or Region
Cape Breton Id., N.S. J. Dwight, Jr.

57. *Regulus satrapa*.

Auk, 4, Jan., 1887. p.16

Brief Notes

Nova Scotia.

N. Vickary has sent us a sketch of the nest of the Golden-crowned Kinglet, recently reported by him. It represents the nest suspended under the limb of a spruce with the smaller branches on both sides falling over so as to screen it. The entrance, a round hole, is at the top under the limb towards the tree. The bird, to gain access, had to pass under and parallel with the limb: he writes that it is about the size of a Goldfinches' and made of green rock moss.

O. & O. XIV, Jul. 1889 p.111

Summer Birds of Sudbury, Ont.
A. H. Alberger.

748. Golden-crowned Kinglet. Tolerably common.

O. & O. XV, June, 1890, p.88

Birds of Magdalen Islands.
Dr. L. B. Bishop.

61. *Regulus satrapa*. GOLDEN-CROWNED KINGLET.— Abundant, breeding on all the islands. A nest taken by Mr. Robbins on Grindstone July 16, was situated in a spruce, about thirty-five feet from the ground. It was firmly attached by the brim to the branch above and at the same time rested on, and was slightly fastened to, the small branches below. The young at this date were able to fly.

Auk, VI, April, 1889, p.149

Some Winter Birds of Nova Scotia. By E. H. Worrell.

32. *Regulus satrapa*. GOLDEN-CROWNED KINGLET.— Abundant. I was never in the woods any length of time without meeting a flock. In March I frequently heard the summer nesting song.

Auk, XVI, July, 1899, p. 253.

Birds of N.E. coast of Labrador
by Henry B. Bigelow.

81. *Regulus satrapa*. GOLDEN-CROWNED KINGLET.— Fairly common in patches of spruce timber, as far as Aillik.

Auk, XIX, Jan., 1902, p.30.

Summer Birds of the Cobalt Mining Region,
Nipissing District, Ontario.

by Frederick C. Hubel. *Auk*, xxiv, Jan. 1907, p. 52.

72. *Regulus satrapa*. GOLDEN-CROWNED KINGLET.— Fairly common. Observed feeding young, July 28.

Birds of Toronto, Canada,
by James W. Fleming,
Part II, Land Birds.
Auk, xxiv, Jan. 1907, p. 86.

281. *Regulus satrapa*. GOLDEN-CROWNED KINGLET.— Abundant migrant, April 2 to May 12, and October 6 to 27; irregular winter resident (January 16, 1899, February 3, and April 21, 1894).

Regulus satrapa

1896. Penobscot Bay, Maine.

Deer Island. June 20²/₃ 21²/₃ 24²/₃ 25²/₃ 26²/₃ 27²/₃ 28²/₃ 29²/₃

July 1 3 4 5 7 12 13 14 17 18

Dumpling Island. June 22²/₃

Matinees Islands June 16-22. Only one seen by H. K. Job.

11.
Birds of Dead River Region, Me. F. H. C.

8. *Regulus satrapa*, (Golden-crowned Kinglet).
Saw this dainty little creature at all seasons of the year. Without doubt it commonly breeds, as I observed females carrying material for nests, also the males with food in their bills, yet they eluded my careful search. These birds are very tame and fearless, often entering our cabin at Tim Pond between the logs and flying about the interior, evincing no fear of the occupants. A nest containing an incomplete set of five eggs taken at Caribou, Me., may be described as follows: The nest resembled to a certain extent that of the Blue Yellow-backed Warbler, but differed in having small pieces of hemlock twigs and grouse feathers woven on the outside. The inside was lined entirely with feathers of the Grouse and Canada Jay. It was placed partly pendant from a horizontal branch of a small hemlock at the edge of a forest. The eggs measure as follows: .51x.42, .50x.41, .51x.40, .51x.40, .49x.40. They resemble in color those of the Least Flycatcher, but have a few buff and drab markings in form of spots at larger end. This nest was found by my companion, Dr. W. De F. Northrup, who generously presented it to me. The birds, both male and female, were secured, thus establishing identity beyond doubt.

O. & O. XI. Aug. 1886. p. 114-115

12.
Summer Birds Tim Pond Me., by F. H. C.

- Golden-crowned Kinglet, (*Regulus satrapa*).
They seemed to move in small companies. Common one day and not seen the next.

O. & O. XI. Feb. 1886. p. 25.

748. Golden-crowned Kinglet. Saw four at Boothbay. On an island near Seal Harbor, Mt. Desert, I came across a colony of about fifty of these birds.

O. & O. 15, Nov. 1890. p. 162

Regulus satrapa. - abundant. Profile House, N. H. Aug. 1865.
Regulus satrapa. - Common. Profile House, N. H. Aug. 1-12-1867.
Rye Beach, N. H. 1871. ^{July}
Regulus satrapa. - July 27
Regulus satrapa. - July 30th Rye Beach, N. H. 1872.

Winter Birds of Webster, N. H. by Falco.

Golden-crowned Kinglet, (*Regulus satrapa*). Com-
mon Winter resident

O. & O. X. Jan. 1885. p. 14

Summer Birds of Presidential Range,
White Mts. A. P. Chadbourne

43. *Regulus satrapa*. GOLDEN-CROWNED KINGLET.—Common from
base to tree limit. None seen above the timber line, and everywhere
equally plenty.

Auk, 4, April 1887. p. 107

Bds. Obs. in Franconia, N. H. June 11-21
'86, and June 4-Aug. 1, '87. W. Faxon

81. *Regulus satrapa*. GOLDEN-CROWNED KINGLET.—Common in
coniferous forest.

Auk, V. April, 1888. p. 163

Birds Obs. at Moultonboro, N. H.
July 21-Aug. 11, 1883. F. H. Allen

Regulus satrapa.—A few seen on Ossipee Mt.

Auk, VI. Jan., 1889. p. 79

Bird Notes, Central N. H. Winter '91-92
J. H. Johnson

Golden-crowned Kinglet, plenty.

O. & O. Vol. 17, May 1882 p. 72

Brazey Point, Warren, N.H.

Brazey Point, Warren, N.H.

1884

June 18, 1884. 204. 1884

1882. 107

1886

1887

1888

1889

NOTES FROM TAFTSVILLE, VT.—April 16th found me in the woods for one half hour. Seated upon a stump to watch the Blue-Snowbirds, (*Junco-hyemalis*), which were very numerous, I heard what at first I mistook for the song of the Ruby-crowned Kinglet, (*Regulus calendula*), but soon the little songster came within ten feet of me, when with much pleasure I saw it was the Golden-crowned Kinglet, (*Regulus satrapa*), this being the first time I have positively identified its song, which, though lacking the power, resembles the beautiful song of the Ruby-crowned.

C. C. Tracy. Taftsville, Vt.

(P. & O. 17. May. 1884. p. 61.)

Winter Birds of Southwestern Vt. 1888.

I have not observed a single specimen of the Golden and Ruby-crowned Kinglet this Winter; last Winter I found several of each. C. C. Johnson, Hydeville, Vt.

O. & O. X. Apr. 1885. p. 63

79. *Regulus satrapa*. GOLDEN-CROWNED KINGLET.—Their song was heard on several occasions in the heavy timber at the base and once at about 2500 feet altitude. It is a prolonged bubbling warble, rather lacking in musical quality.

DE GRAYSON, VERMONT.

1888. 27. 111. 080. 1000. & 2000.

Regulus sat Dec. 29² - 31⁶ 1884 - E. Mass.

2-2,

E. Mass. 1885.

91. *Regulus satrapa*. Oct. 5⁶. Nov. 26². 30⁶

3 *R. satrapa* Nov. 8¹⁰ E. Mass. 1888.

Great id. Mass. ~~1888~~ (Nov. 21-23.)

Regulus satrapa - 21² - 22² - In pitch pine woods with preceding

Regulus sat. 133 buildings 14² - 15² - 16⁵ - 17² ✓

Winchendon, Mass. June. 1888.

Mass. (near Cambridge).

1887

April 6² - 9²

Regulus satrapa

Mass. (near Cambridge).

1887

Oct. 4² - 5¹

Nov. 8² - 9¹⁸ - 20⁵

1888

Feb. 10²

Apr. 9² (Concord) - 18¹ (Concord) - 25²

Nov. 2¹⁰ - 14² - 17²

Regulus satrapa

Regulus satrapa.

Concord, Mass.

1878, Oct. 15.

Heard the first.

A Correction.-- In the article by Thurston and Boyle on Long Island birds in 'The Auk,' XXX, line three, page 545, 'Ruby-crowned Kinglet' should read Golden-crowned Kinglet.—HENRY THURSTON, American Museum of Natural History, New York City.

B. 106.

1887
April 12⁶*Regulus satrapa*
Mass (Winchendon)

26.

1887

June 26¹ a pair of adults with brood of young 1887
" 13² - 14² - 15² - 16² - 17⁶ 1888*Regulus satrapa*.

W. Middlesex Co. Mass.

June 25-30, 1889.

Regulus satrapa 27.

Mt. Watalie and Ashby. Numerous on the N. side of Watalie in a heavy
 4th new forest. Also observed in former swamp near the N. base of the
 mountain and in a similar swamp near the S. base. The 28th
 were in full song during our stay but we observed a pair feeding
 a young bird (bob-tailed) on the 25th and a pair followed
 by a brood of young on the 27th. It is shown the duty of
 feeding the young with his wife.

Birds Known to Pass Breeding Season
nr. Winchendon, Mass. Wm. Brewster78. *Regulus satrapa*.

Auk, V, Oct., 1888, p. 389

Notes on Birds of Winchendon, Mass.
William Brewster.

Regulus satrapa.—My experience with this species at Winchendon is given fully in another article in this number of 'The Auk.'

Auk, V, Oct., 1888. p.393

Winter Notes from Taunton, Mass.
J. C. Cahoon.

Kinglets are not as numerous as usual.

O. & O. XI. May, 1886. p.77

H. Custer.
O. & O. XVII, July 1892. p.97.
Lynn, Mass.

May 30. To woods all day. Yesterday saw pair of Golden-crowned Kinglets; hunted for nest all day and came home at seven in the evening, tired out with chasing the birds about and climbing a few million trees. Went at it again at half past eight this morning and at twenty minutes past one I had the nest. I was about done up, as it was hard work and took a lot of patience, (something that I do not possess to any very great extent). Nest is up about forty feet and away out on the end of black spruce limb. I did not examine it as bird was carrying stuff to it, and I take it that she has not completed the building. This makes three Golden-crowned Kinglets I have found; one on June 2, 1889, with nine eggs and one on June 14th, that contained young. I find this species is very hard to place, as they make very little noise and keep way up high on the trees. I saw a pair of "Ruby" but could not locate nest and will try it again. The ♂ Ruby is very misleading as he covers the ground for fully a mile square and the ♀ is not to be seen. I found nest of Olive-backed Thrush just about built. This was on a little spruce tree about seven feet up from the ground. Will go at the Ruby Kinglet's again to-morrow.

I examined the Golden-crowned Kinglet's nest found May 30th and it was full of young, so I was wrong in thinking it was material that the ♀ was carrying on the 30th ult. I found a Hummingbird's nest with two eggs. Looked at Olive-backed Thrush found the 30th ult. and it held two eggs which were greenish-blue with red spots.

General Notes.

Summer Birds of Central Berkshire
Country, Mass. Francis H. Allen. Ralph Hoffmann

27. *Regulus satrapa*. GOLDEN-CROWNED KINGLET.—Found in spruce woods in Becket, Washington, and northward.—FRANCIS H. ALLEN, West Roxbury, Mass.

Auk XII, Jan, 1895 p. 89

igration, Bristol County, Mass.
1885. Charles H. Andros.

stormy. Golden-crowned Kinglets,
d.
O. & O. XI, Jan. 1886. p. 2

Birds of Bristol County, Mass.
F. W. Andros.

Regulus satrapa Licht., Golden-crowned
Kinglet. Winter visitant, common.

O. & O. XII, Sept. 1887 p. 141

Bds. Obs. near Graylock Mt. Berkshire
Co. Mass. June 28—July 16. W. Faxon

73. *Regulus satrapa*. GOLDEN-CROWNED KINGLET.—During my first ascent of Graylock on June 28, I discovered the Golden-crowned Kinglet in full summer song in the thick second growth of black spruce through which the carriage road passes before emerging into the 'Mountain Pasture.' Approximate altitude, 2200 feet. I afterward found the Kinglet to be a not uncommon bird at this place and higher up on the mountain in the primitive spruces. It has been recorded from the summits of the Catskills by Mr. T. M. Trippe* although Mr. Bicknell† failed to identify it in the same region at a later date.‡

* Amer. Nat., VI, 47, 1872.

† Trans. Linn. Soc. N. Y., I, 144, 1882.

‡ Since this was written Mr. William Brewster has published an account of the breeding of the Golden-crowned Kinglet in Winchendon, Worcester Co., Mass. (Auk, V, 337, Oct., 1888). In Dr. Emmons's catalogue of Massachusetts birds (Hitchcock's 'Report on the Geology, Mineralogy, Botany, and Zoology of Massachusetts, 1833) this bird is marked as breeding in the State. As professor in Williams College, almost within the shadow of Graylock, Dr. Emmons had ample opportunity to know of the bird's presence on the mountain in the breeding season, although his authority in this case seems to have been universally discredited. In the second edition of this catalogue, 1835, *Dendroica maculosa* and *Sitta canadensis*, both common in the Graylock region in summer, are also marked as breeding in Massachusetts, although not admitted in this *note* to recent lists until Mr. Allen's revised catalogue of 1886, on Mr. Brewster's authority. In the light of the recent testimony to the accuracy of Emmons's catalogue it is worthy of note that *Dendroica castanea* is also marked by him as "breeding, rare." Is it not possible that in Dr. Emmons's day, before the destruction of the great coniferous forest of Graylock had gone very far, this bird found a congenial breeding ground there, as it still does in the White Mountains of New Hampshire?

Auk, VI, April, 1889. p.105

In the nest of *Regulus satrapa* 27.
taken in Lynn, Mass.

Doubtful ~~FA~~ Recorded in
O. & O. June 1889

Lynn July 20-89

Mr Brewster

Dear Sir
The nest of the Kinglet
was taken here by
a very young man
by the name of
Swiss it is a very
handsome nest built
side of green moss
nearly the size of
the Goldfinch if you
come down to will
go with you to see
it: it was on
a spruce tree and
almost concealed by
the small limbs

Brief Notes.

N. Vickary informs us that a nest with three eggs of
the Golden-crowned Kinglet was taken last month at
Lynn, Mass. It was found in a spruce tree. He says
that the outside is covered with green moss and of
beautiful construction. This is the only instance that
has come under his observation.

O. & O. XIV, June, 1889 p. 95

Auk, XIII, Oct., 1896, p. 346.

Regulus satrapa.

Plymouth Co., Mass., in summer.

A. P. Chadbourne.

Should you come
down dry. and a
postal the day before
you come
Yours truly
W. T. H. W.



Brief Notes.

N. Vickary informs us that a nest with three eggs of the Golden-crowned Kinglet was taken last month at Lynn, Mass. It was found in a spruce tree. He says that the outside is covered with green moss and of beautiful construction. This is the only instance that has come under his observation.

O. & O. XIV, June, 1889 p. 95

Auk, XIII, Oct., 1896, p. 346.

Regulus satrapa.

Plymouth Co., Mass., in summer.

A. P. Chadbourne.

1889. Near Lynn, Mass.

Mr. H. Wickary tells me that the nest announced by him in O. & O. (June or July 1889) was found on the hay place about 3 mi. from Lynn on the old Salem turnpike. It was found building, after laying 2 or 3 eggs the birds deserted it & disappeared. The finder thinks the ♀ was killed. The eggs have been "stolen by some collector" since the nest was taken. Nest was in balsam in creviced ground.
No. 100. See also

Breeding of the Golden-crowned Kinglet in Norfolk County, Massachusetts.—

On June 16, 1908, I discovered in Stoughton, Massachusetts, a breeding pair of Golden-crowned Kinglets (*Regulus satrapa satrapa*) with their nest, apparently the first to be found in the east-central part of the state since the nest with three eggs found by N. Vickary at Lynn in May or June, 1889. My attention was first attracted by the familiar call-notes of the birds coming from the edge of a rather close growth of Red Cedar (*Juniperus virginiana*) and deciduous trees at the base of a low hill close to a little-travelled wood-road. Pushing in among the trees, I soon caught a glimpse of the female Kinglet being pursued by a Black-and-white Warbler. The male soon came into view, and very soon the female disappeared in the top of a red cedar about twenty feet high. After a few minutes' wait I climbed a nearby tree and found her sitting on the nest. This was placed 18 feet 10 inches above the ground on the upper side of a small branch about a foot long, near the trunk and about a foot and a half from the top of the tree, rather firmly fastened and requiring some effort to dislodge. The nest is a firm ball of green moss (chiefly *Thelia hirtella*, identified by Dr. W. G. Farlow) with some bark, lichens, and feathers, measuring 11 cm. in length, 9 cm. in breadth, and 6.5 cm. in height. The cavity, 4.5 cm. deep and 4 cm. in diameter at the top, is slightly enlarged below and lined chiefly with fine bark strips and a few feathers including some from the head of the female Kinglet. The eight eggs in the nest contained small embryos. They are elliptical-ovate in outline, with the smaller end rather blunt, dull white in ground color, finely speckled all over, but especially at the larger end where a more or less distinct wreath is formed, with pale ashy-brown; on a single egg the markings are very faint. They measure in inches .54 × .41, .54 × .42, .55 × .41, .55 × .41, .55 × .41, .56 × .41, .57 × .41, .57 × .41, averaging .55 × .41.

Although on June 16, 1908, when this nest was found and taken, only a single pair of the birds was seen, I feel convinced that at least two pairs of the birds must have been nesting there, for on 6 July I saw at the same locality at least three Golden-crowned Kinglets, apparently young birds, as no crown patch was visible. Brewster found that a pair whose nest was nearly finished and being provided with lining on June 13 in Worcester County, Massachusetts, required sixteen days to complete it and lay their set of nine eggs, and that another nest nearly completed on June 16 did not acquire its full set of nine eggs until the same date (June 29). It is impossible to suppose that my pair, whose nest was taken on June 16, could have built another nest, laid eggs, and brought out nearly fullgrown young in twenty days, and there must certainly have been at least one other pair in the vicinity. On August 4 I again saw three Kinglets at the same locality, after which date they were not seen again. One at least of those seen on this date had the crown-patch of the adult.

The first well identified nest of the Golden-crowned Kinglet seems to have been that found by H. D. Minot (*Land-birds and Game-birds of New England*, ed. 1. 56 (1877)) in the White Mountains of New Hampshire on July 16, 1876. This nest, which contained young birds, was four feet from the ground in a hemlock, pensile like the majority of recorded nests. Mr. Vickary's Lynn nest (O. & O. xiv. 95, 111 (1889)), which contained only three eggs, was in a spruce tree and likewise suspended from a limb. Both the nests of the Golden-crown recorded by H. Austen (O. & O. xiv. 93-94 (1889); xv. 106 (1890)) from the vicinity of Halifax, Nova Scotia, were "suspended . . . on twigs . . . fully three to eight inches underneath the main branch . . . fastened by the side with moss to the small branches." One of two nests of the Ruby-crown, however, was built on a limb (l. c. xv. 106), while the other was suspended. Brewster's account (Auk, v. 337-344 (1888)), the fullest that has yet appeared of the nesting of the Golden-crowned Kinglet, gives details of three nests found in Winchendon (Mass.), or vicinity, all of which were pensile.

A brief record of the taking of the present nest has already appeared in 'The Taxidermist' (no. 4, p. 7 (Oct. 1908)).—S. F. BLAKE, Stoughton, Massachusetts.

Auk, xxxiii, July, 1916, p. 326-327.

Birds of the Adirondack Region.

C. H. Merriam.

II. *Regulus satrapa*, Licht. GOLDEN CRESTED KINGLET.—Common during the migrations and probably breeds.

Bull. N. O. C. 3, Oct, 1881, p. 226

Oneida County, New York,
William L. Ralph & Herbert Bass

Regulus satrapa.—Given in the List as "a common migrant." To this must be added:—An occasional resident, both winter and summer; breeds.—A specimen was taken by Messrs. Hughes and Shepard at the same time and place as the preceding, and they also report that they have found them other winters. During the latter part of June, 1888, near Holland Patent we observed a pair of these birds followed by seven or eight young which they were feeding.

Auk, VII, July, 1890, p. 232.

Notes on the Spring Migration of Birds in the
Northern Adirondacks [Ontonagon], New York [1901].

April 30 to May 5.

Golden-crowned Kinglet. Not common.

E. A. Sterling, Breeding, etc.

Auk, XIX, July, 1902, p. 298.

Raleigh, N. C. ... C. S. Bramley

On November 16th we secured a partial albino Golden-crown Kinglet, a most exquisite little creature; it was pure white, wings and crown as usual, but the former with more white, the tail also was whitish at base, eyes brown; it appeared to be in perfect health and there were no worms in the intestines.

O + O, XI. May, 1886. p. 76.

The Singing of Birds. E.P. Bicknell.

Regulus satrapa. GOLDEN-CROWNED KINGLET.

Although this species has been accredited with decided musical ability, I have never heard from it a closer approach to song than a faint chirping, interspersed with weak, tremulous notes. These, however, though never to be mistaken for song, are not wholly devoid of melody, and are at times pleasantly tintinabulous. These notes are the bird's chief vocal expression while it is with us in fall, winter, and spring, and differ greatly from the quick stridulous call-notes of its ruby-crowned relative.

Auk, I, April, 1884, p. 134.

Regulus satrapa : See under
R. calendula..

Bull. N. O. C., 1862 p.

GOLDEN-CROWNED KINGLET (*Regulus satrapa*). Mr. J. P. Loose, of Hagerstown, Md., writes that he found a female Golden-crown on July 22, and asks if this is

not rare. *Ornithologist and Oologist*. This is the first occurrence of this bird being found in summer so far south that we are aware of, but that does not necessarily prove that it has nested or was bred there. (Ed.)

*The Baltimore (Washington D.C.) Oct. III no 3
p. 1584 p. 24.*

A. E. Howell, Rockaway Beach, N. J., 57.

Oct. 6, 1889

We found the Kinglets (*Regulus satrapa*) very abundant all day, and extremely confiding, so that we had abundant opportunity to watch their active and dexterous manoeuvres in search of food, and to secure all we had the heart to shoot.

Bull. N. O. C., 1889, p. 170

THE GOLDEN-CRESTED WREN BREEDING IN THE COLORADO VALLEY.— July 1, at an elevation of 11,500 feet, I shot an adult Golden-crested Wren (*Regulus satrapa*). Its presence made its nesting here almost a certainty, but all doubts were set at rest by the capture of a young bird just from the nest, in another part of the county, at 11,000 feet on July 25. Several others were heard and seen. I judge it is not uncommon, but from the fact of its ordinary call-notes being so deceptively similar to the Creeper's notes, it is easily passed by. So far as I know it seems to range a little above the bulk of the Ruby-crowns.—FRANK M. DREW, *Howardsville, San Juan County, Col.* Bull. N. O. C., 6, Oct., 1881, p. 244.

Birds of Western North Carolina.
William Brewster.

42.

97. *Regulus satrapa*. GOLDEN-CRESTED KINGLET.—Throughout the sombre balsam forest on the upper slopes and ridges of the Black Mountains this Kinglet was one of the most numerous and characteristic birds. The males were in full song at the time of my visit (June 1, 2), but as they kept well up in the tree-tops it was next to impossible to get a sight at one. Indeed, the single specimen which I shot cost more than an hour's persistent labor. This specimen seems to be identical with northern birds. The song, also, was quite normal.

Ann. 3, April, 1886, p. 177

Golden Crested Kinglet at Grand Manan. 2.

BY CHAS. H. ANDROS.

To-day being the Lord's, and I being a good and faithful follower of his (nature's) works, I started off to secure the Ruby-crowned Kinglet nest. After cutting down the branch from which the nest was suspended, I let my eagle eyes roam around, when, lo and behold, I spotted a pair of Golden-crowned Kinglets flitting about on a black spruce, about fifteen yards distant. I got down my tree in a lively manner, and was in time to see one of the Kinglets fly into another black spruce, and as she did not come out, I flitted up; consequence was I started her off the nest. It was way out on end of the branch, underneath (same as the Ruby-crowned), so I had to crawl out and fill the nest up with wool, then I crawled me back, cut off the branch, and with careful work landed with the whole business safe on the ground. The old hen still flitting about,

I thought it best to gather her in, so putting a few shot in my catapult (if you know what that is), I brought her down. When I came to examine the nest, I found that it contained nine eggs, seven of them white marked with brown, and two pure white. While I write this I have both nests before me, and I wish to remark that they are not built on a branch, as described in Coues' key, but they are suspended to the small little branches on twigs, that shoot out from the main branch, and are fully three to eight inches underneath the main branch; the bottoms of the nests are not fastened, nor do they touch a branch, but the nests are fastened by the sides with moss to the small branches; both are alike and both were built on black spruce trees, about 18 feet from the ground. The nests, outside, are made with moss, such as grows on the ground, and that hangs to the trees, and the insides are nicely lined with feathers. You will see them when you come on, and that I am correct in statement made. I am sorry now that the Ruby-crowned changed her mind about laying her eggs, after my spending several days, watching her build the nest, as I might have had the two kinds, but I hope to get one yet.

Harry Austen.

O. & O. XIV, June, 1889 p. 29-34

June 2nd 1889
Hedberg, N. S.

I include this species simply to mention a nest taken by Mr. Cheney a short time before our arrival at his home. Though, undoubtedly, nests have been taken since that found by Dr. Brewer, his is the only authentic instance with the exception of the incomplete set taken by Dr. Northrup at Caribou, Maine, which enters into detail that I have yet seen in any New England work. Mr. Mino's nest found in New Hampshire, contained young. My regret is that I did not more carefully note the measurements and material which enters into the make up of Mr. Cheney's nest. It is a beautiful piece of architecture, shaped much like the home of the Blue-grey Gnat-catcher, but is much larger and deeper. Internally, it is lined with soft down and wool, and contains about six cubic inches. From edge of nest to bottom exteriorly, measures about five inches, and the thickness of nest wall at top must be about one-half inch. Externally, the nest is covered

with green moss and decorated with a few cobwebs and lichens, and unlike Mr. Carpenter's nest was saddled to a spruce limb. It also differs from his, being open at the top. The wool is easily obtainable, sheep ranging at will over the sparsely grown highlands. Though supposed to be domesticated, the rams are tough looking customers, and the whole flock bore signs of cruel neglect, being sadly in need of shearing when we met with them. The wool collects on thorny bushes and shrubbery in considerable quantities, and many birds take advantage of the desirable material for a lining. It is naturally coarse and poor, the sheep being obliged to shift for themselves the year round, and the many skeletons noticed testify to their inability to withstand the exposure of the rigorous winters. They are practically of no use save for mutton, the wool not attaining fine even texture suitable for the market. But to return to the kinglet's nest. It was taken on or about June 1st, and contained ten eggs of a dingy white ground. The confluent dotted crown presents the appearance of having come in contact with a twirling motion to a finger daubed with red chalk or ochre. The markings being at first a heavy blotch and gradually wearing down to a faint spot not wholly obscuring the ground. The mark was invariably confined to the crown, and was usually nearly circular. Lack of tools prevented my taking measurements, which could not have failed to have been of interest in a so rare and little known variety.

O. & O. XII, Dec. 1887 p. 203-204.

hood; that from their size and markings they cannot well belong to any other species; and because, while the egg so closely resembles those of *R. cristatus* (to which bird *R. satrapa* is also very closely allied) as to be hardly distinguishable from them, it is also essentially different from the egg of *R. calendula*,* which more nearly resembles the eggs of *R. ignicapillus*.

The following account of the nest and eggs I copy, by permission, from Mr. Merrill's letter: "In 1876 a friend presented me with the nest which I shall describe, but the bird was not obtained, and consequently its identification is a matter of conjecture. The nest consisted of a large ball of soft moss, the whole forming a mass about $4\frac{1}{2}$ inches in diameter. The opening was at the top, and was about $1\frac{3}{4}$ inches across and 2 inches deep. It was lined with hair and feathers, principally the latter. The nest was in one of those bunches of thick-growth so common on many of our fir-trees, and contained ten eggs of the following dimensions:—

No.	Length.	Width.	No.	Length.	Width.
1	.52	.41	6	.47	.39
2	.50	.40	7	.52	.41
3	.50	.41	8	.51	.41
4	.50	.41	9	.50	.41
5	.47	.39	10	.50	.41

Common. Breeds about June 5. Took young fully fledged the 15th of July. The nests are generally low, not more than ten feet from the ground.

47. *Sphyrapicus thyroideus*. BROWN-HEADED WOODPECKER.— Not rare. Several pairs bred about the Lakes. The 23d of June I found a nest containing four young about two or three days old. The nest was in a "quaking asp," about ten feet from the ground. The entrance to the nest was very small, and the cavity inside not large. July 4, I took three. In nestlings nearly fully fledged the sexual difference was as plainly marked as in the adults. There were two males and two females in this nest. On July 11 I found a second nest in a pine-tree about twelve feet from the ground. This contained four young females fully fledged. These birds do not seem shy, but are restless.

48. *Colaptes mexicanus*. RED-SHAFTED FLICKER.— Common. Breeds about June 1. Took young fully fledged on July 2 and July 4. Seven in each nest. These nests, like those of most Woodpeckers I found in this region, were not more than ten feet from the ground. The birds are all typical, and show the distinguishing marks of sex in the first plumage.

49. *Bubo virginianus*. GREAT-HORNED OWL.— Not common. Specimens are much grayer than those taken in the East.

hood; that from their size and markings they cannot well belong to any other species; and because, while the egg so closely resembles those of *R. cristatus* (to which bird *R. satrapa* is also very closely allied) as to be hardly distinguishable from them, it is also essentially different from the egg of *R. calendula*,* which more nearly resembles the eggs of *R. ignicapillus*.

The following account of the nest and eggs I copy, by permission, from Mr. Merrill's letter: "In 1876 a friend presented me with the nest which I shall describe, but the bird was not obtained, and consequently its identification is a matter of conjecture. The nest consisted of a large ball of soft moss, the whole forming a mass about $4\frac{1}{2}$ inches in diameter. The opening was at the top, and was about $1\frac{3}{4}$ inches across and 2 inches deep. It was lined with hair and feathers, principally the latter. The nest was in one of those bunches of thick-growth so common on many of our fir-trees, and contained ten eggs of the following dimensions:—

No.	Length.	Width.	No.	Length.	Width.
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5	.47	.39	10	.50	.41

The eggs are of a creamy-white color, and are covered with very obscure spots, so very obscure, in fact, that they merely give a dingy or dirty tint to the egg, and some to whom I have shown them are doubtful if they are spots, but I regard them as extremely obscure and confluent spots, not on, but in, the shell. From the number of the eggs, their extreme smallness, and the situation of the nest, I have been inclined to believe it to be a Kinglet's."

Examining my example with a powerful magnifier, I find the ground-color to be white with shell-marks of purplish-slate, and a few ob-

NEST AND EGGS OF THE GOLDEN CROWNED KINGLET (*REGULUS SATRAPA*).

BY T. M. BREWER.

I HAVE been recently permitted to examine an example of one of ten eggs from an unknown nest, but which, by the pretty sure evidence of exclusion, cannot well belong to any other species of bird than the Golden-crowned Kinglet (*Regulus satrapa*). The nest was found in the neighborhood of Bangor, Me., was about six feet from the ground, and is now in the possession of Mr. Harry Merrill of that city. Through his courtesy I have been permitted to examine one of its eggs, and to compare it with sets of the eggs of *Regulus cristatus* and *R. ignicapillus* of Europe. My reasons for supposing the nest and eggs to belong to this species are, that this bird is a not uncommon summer resident in that neighbor-

* See the interesting notes of Mr. W. E. D. Scott in the present number of the Bulletin, p. 91. I have also compared the egg in question with that of the *calendula* obtained by Mr. J. H. Batty on Buffalo Creek in Colorado, July 21, 1873. This, though in a somewhat fragmentary condition, exhibits its size and markings. It measures .59. x .45. The ground-color is a creamy white, and over this are profusely scattered minute dots of brown with a reddish tinge. It closely resembles in its general character the supposed egg of *satrapa*, is larger, more oval in shape, and the spots are more distinct and of a different shade. Mr. Batty's nest contained one egg and six young. The parent, though not procured, was seen, and there appears to be good reason to accept the identification.

scure superficial markings of a deep buff, giving to the ground the effect of cream-color. This egg so closely resembles my set of the eggs of *R. cristatus* that, placed in the same tray, it is not readily distinguishable from them. It differs in size, shape, and markings from the eggs of *R. calendula*, which are more oval, are marked with brown, and resemble, in description, the eggs of *R. ignicapillus*. It will be seen that the greatest length of an egg of *R. calendula** is .58, that of the supposed *satrapa* only .52; the least length of *calendula* .54, that of *satrapa* .47. The variation in breadth is also as .45 to .41. The average measurement of *calendula* is $.56 \times .45$, that of *satrapa* $.49 \times .40$.

In "North American Birds" I ventured the remark, in reference to this nest, — then unknown except, as given by Mr. Lord, as pensile and suspended from the extreme end of pine branches, — that the presumption is that it builds a pensile nest not unlike its European congener, and lays small eggs finely sprinkled with buff-colored dots on a white ground, in size nearly corresponding with those of our common Humming-Bird." Mr. Merrill's nest, if not pensile, is at least in a pensile position, and is in all respects such a nest as was to be anticipated from the uniform habits, so far as they are known, of the members of this genus.

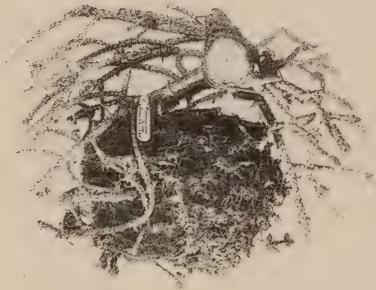
Both of the European species of this genus, *R. cristatus* and *R. ignicapillus*, and their Asiatic relative, *R. himalayensis*, are known to build pensile nests, though, like very nearly all pensile builders, they occasionally make use of other positions. It was, therefore, not only natural, but even unavoidable, to anticipate that our own *Reguli*, so closely allied to these in all respects, would be found to nest in a similar manner, and accordingly in "North American Birds" I ventured to say that we might "reasonably infer that its nest (that of *R. calendula*) is pensile like that of its European kindred." Mr. Scott's timely discovery shows that my anticipations have been realized. But even without this verification I should have felt fully justified in still maintaining the reasonable probability that both of our *Reguli*, when their history shall be more fully known, will be found to be pensile in their architecture. Yet the author of "Birds of the Colorado Valley" says: "Since Dr. Brewer thought he might reasonably infer that the nest was pensile *the discovery has been made that it is not so* [the italics are mine], showing that care must be exercised in natural history inferences." Even without the light

* See Mr. Scott's valuable paper, *anted*, p. 91.

of Mr. Scott's valuable discoveries I would still venture to maintain that all due and proper "care" had been exercised by me when I drew my inference, and that the writer quoted was too hasty in his own conclusions. There has been nothing to show that Mr. Batty's nest was not of a semi-pensile character, and certainly the time has gone by for any one to assume, on the score of a *single* example, the unvarying character of the nest of any bird. I say single example, for, except that of Mr. Batty, there was no other. Mr. Henshaw's was wholly unidentified, and it is quite likely belonged to some other bird. Of course Mr. Scott's testimony now settles beyond dispute the pensile character of its nest, but it does not necessarily show either that Mr. Batty was mistaken in his identification, or that Mr. Henshaw's supposed nest may not have been rightly surmised. We know too little as yet of these nests to lay down any arbitrary rules of generalization.

Since the above was written, Dr. J. C. Merrill has called my attention to the illustration of an egg of *R. satrapa* by Dr. Baldamus in Cabanis's "Journal" for 1856 (p. 23, Pl. I, No. 8). Although somewhat rudely represented, the identification is probably correct. In this egg there is more of the buff-colored markings, and much less of the obscure purplish-slate than in my specimen. The ground-color is less concealed, and is represented as a buffy-white.

NOTE. — Since this paper was prepared, Mr. Allen has called my attention to the description of the nest of *R. satrapa*, which I had overlooked, in Minot's "Land and Game Birds of New England" (p. 56). This nest, the writer states, was found in the White Mountains, and "*hung four feet above the ground, from a spreading hemlock bough, to the twigs of which it was firmly fastened*; it was globular, with an entrance in the upper part, and was composed of moss, ornamented with bits of dead leaves, and lined chiefly with feathers." The italics are my own, to emphasize the pensile character of this nest, the account corresponding so closely to descriptions of the nests of *R. cristatus* of Europe. **Bull. N. O. C. 4, April, 1879, p. 96 - 99.**

NESTS OF *REGULUS SATRAPA*.

Upper figure: nest found June 16, from photograph taken after leaves had dropped off.
 Lower figure: nest found June 13, from photograph taken while the leaves yet remained on the branch.

THE AUK:

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BREEDING OF THE GOLDEN-CRESTED KINGLET
 (*REGULUS SATRAPA*) IN WORCESTER
 COUNTY, MASSACHUSETTS, WITH A DE-
 Scription OF ITS NEST AND
 EGGS.

BY WILLIAM BREWSTER.

DURING a visit to Winchendon, Worcester County, Massachusetts, in the latter part of June, 1887, I found, among other interesting things, a pair of Golden-crested Kinglets with young, the latter only a few days from the nest. They were in dense woods of mixed white pine (*P. strobus*) and spruce (*A. nigra*) on low, rather swampy ground. A careful search through several similar woods in the neighborhood failed to reveal any more birds of this species. Perhaps there were no others in 1887, for Mr. C. E. Bailey, who was my companion on that occasion, met with none either before or after my visit, although he spent most of the season collecting about Winchendon. Over the very same ground, however, in June, 1888, I found no less than six pairs of these Kinglets and, with the assistance of Messrs. C. E. Bailey, S. W. Denton, and H. M. Spelman, secured three of their nests, two with sets of nine eggs each.

As the published descriptions of the nesting of this species are somewhat meagre and more or less conflicting, it seems worth while to treat the present specimens at some length.

The first nest was found June 13, 1888, when the birds were

at work on the lining, the exterior being apparently completed, and was taken June 29, with a set of nine eggs, four perfectly fresh, the others slightly incubated. It was placed in a tall, slender spruce (*A. nigra*), on the south side, within about two feet of the top of the tree, and at least sixty feet above the ground, suspended among fine pendant twigs about two inches directly below a short horizontal branch, some twelve inches out from the main stem, and an equal distance from the end of the branch. The tree stood near the upper edge of a narrow strip of dry, rather open woods bordered on one side by a road, on the other by an extensive sphagnum swamp, the growth both in the swamp and along its edges being almost exclusively spruces (*A. nigra*) and balsams (*A. balsamifera*).

The nest measures externally: greatest depth, 3.60; least depth, 2.70; greatest diameter, 4.20; least diameter, 3.00 inches. Two measurements are required for each dimension because of the irregularity of the external outline. This although generally rounded is broken in places by deep depressions and prominent knobs or excrescences. The top of the nest is open, but the rim is slightly contracted or arched on every side over the deep hollow which contained the eggs. The extent of this contraction is best shown by the following measurements of the interior cavity: diameter at top, 1.15 × 1.95 inches; diameter midway between top and bottom, 1.40 × 2.10. The cavity is oblong, not round. The walls vary in thickness from 1.35 to .40. Outwardly they are composed chiefly of green mosses* prettily diversified with grayish lichens and *Usnea*, the general tone of the coloring, however, matching closely that of the surrounding spruce foliage. The interior at the bottom is lined with exceedingly delicate strips of soft inner bark and fine black rootlets similar to, if not identical with, those which almost invariably form the lining of the nest of the Black-and-yellow Warbler. Near the top are rather numerous feathers of the Ruffed Grouse, Hermit Thrush, and Oven-bird, arranged with the points of the quills down, the tips rising to, or slightly above, the rim and arching inward over the cavity, forming a screen that partially concealed the eggs.

* These have been identified by a botanist as representing five species of *Hypnum* and one of *Frullania*.

The second nest was found June 16, when it was nearly completed, and taken June 29 with nine eggs, five of which were fresh, the remaining four being slightly incubated. The locality was a lonely glen on high land between two ridges. The ridges were covered with young white pines. The prevailing growth in the glen was spruce and hemlock, the trees of large size and standing so thickly together as to shut out nearly all sunlight from the ground beneath. The nest was on the west side of a sturdy, heavily limbed spruce (*A. nigra*) about fifty feet above the ground, twenty feet below the top of the tree, six feet out from the trunk, and two and a half feet from the end of the branch, in a dense cluster of stiff, radiating (not pendant) twigs, the top of the nest being only an inch below, but the whole structure slightly on one side of the branch from which its supports sprang. Above and on every side it was so perfectly concealed by the dense flake-like masses of spruce foliage that it was impossible to see it from any direction except by parting the surrounding twigs with the hand. From directly below, however, a small portion of the bottom was visible, even from the ground. The foliage immediately over the top was particularly dense, forming a canopy which must have been quite impervious to the sun's rays, and a fairly good protection from rain also. Beneath this canopy there was barely sufficient room for the birds to enter. In general shape and construction this nest closely resembles the one above described. It is, however, smaller, shallower, more compact, rounder, and less irregular in outline, measuring as follows: externally, greatest depth, 2.55; least depth, 2.45; greatest diameter, 4; least diameter, 2.90 inches; interior, diameter at rim, 1.70; diameter midway, 1.75; depth, 1.40; greatest thickness of walls, 1.60; least, .75. The materials composing the exterior are, similarly, green mosses and gray lichens, but the lichens are much more sparingly used. The lining, as far as can be seen without subjecting the nest to undue violence of handling, is wholly of the downy under feathers of the Ruffed Grouse. These are used so lavishly that, radiating inward from every side, they nearly fill the interior and almost perfectly conceal its contents.

The third nest was also in a spruce which stood near the top of a steep, picturesque hillside covered with noble old hemlocks interspersed with a few rather stunted spruces, the ground be-

neath rough and broken by ledges whose rugged outlines were more or less softened by a luxuriant covering of moss and rock ferns. The nest was on the south side of the tree about thirty feet above the ground, twelve feet out from the main stem, and five feet from the end of the branch. It was found June 17, when the bird was at work carrying into it what appeared to be the lining. We could not examine it closely without cutting off the branch, so it was left until June 29, when it proved to be empty, evidently deserted, and so dilapidated that at first we were inclined to believe it an old nest. This cannot have been the case, however, for the materials of which it is composed are quite new and fresh. These are essentially the same as in the other two nests, but there is no lining, although the outer edges of the rim as well as much of the upper portions of the exterior are covered with a profusion of feathers (chiefly those of the Ruffed Grouse with a few of the Red Crossbill) while others are merely entangled among the surrounding twigs. The probable explanation of this state of affairs is that the nest was first deserted, and shortly afterwards partially dismantled, either by the owners or by some mischievous squirrel or mouse. Originally, however, it must have had feathers over most of the exterior, for many of those now there are firmly attached to, or even woven into, the moss of which it is composed. This nest is larger than either of the others, measuring as follows: greatest external diameter, 4.00; least, 2.10; greatest depth, 3.90; least, 2.90 inches. The interior is too badly damaged to admit of accurate measurements.

To recapitulate. In position—but not of course in construction—the first nest resembles that of the Baltimore Oriole, being similarly hung near the ends of long, drooping twigs. The second is built more like a Vireo's, but with this difference, that instead of being suspended by its upper edges only, and between the forks of a single stem, it is supported on every side, and from the top nearly to the bottom, by numerous slender, but stiff, radiating twigs. It is, nevertheless, a distinctly pensile structure. The position of the third nest is different from that of either of the others. Placed nearly midway between two stout branches which in reality are forks of the same branch, one above the other, and at the point in question about six inches apart, it is attached by the sides and upper edges to the twigs which depend

from the branch above, while its bottom rests firmly on a bristling platform of stems which rise from the branch below. Thus it is at once pensile and non-pensile.

The eighteen eggs making up the two sets above-mentioned vary considerably in shape. The majority are more or less regularly ovate, but several are elliptical-ovate, while two are very nearly perfectly elliptical-oval. The ground color varies from creamy white to exceedingly deep, often somewhat muddy, cream color. Over this light ground are sprinkled numerous markings of pale wood-brown, while at least three specimens have a few spots and blotches of faint lavender. The brown markings vary in size from the finest possible dots to rather large blotches. In most of the specimens they are distributed pretty thickly over the entire shell, but in nearly all they are most numerous about the larger ends where they form a more or less distinct wreath pattern, while in four or five (and these have the lightest ground color) they are nearly confined to the larger ends, the remainder of the egg being very sparsely marked. Separating these eighteen eggs into the two sets to which they respectively belong, I find that these sets resemble each other very closely in every way, each having specimens representing all the variations above described excepting that all three of the eggs with lavender markings belong to the same set. In both sets the whitest, most sparsely spotted eggs were the freshest, showing that they were the last ones laid.

Lest the detail of the above description mislead the reader as to the general appearance of these eggs it may be well to add that while there can be no doubt that the markings are genuine pigment spots and not mere superficial stains (this has been doubted by some writers), they are, as a rule, so fine and so little darker than the ground color, that many of the eggs when viewed at a distance or in a poor light appear brownish cream color and immaculate. The eggs just described measure respectively: (Set A—9) .56 × .44, .57 × .44, .55 × .42, .57 × .43, .57 × .44, .57 × .44, .56 × .45, .57 × .44, .57 × .44 inches. (Set B—9) .56 × .44, .56 × .45, .52 × .42, .59 × .45, .57 × .45, .53 × .43, .57 × .45, .56 × .44, .54 × .44 inches.

In both nests the eggs, too numerous to find sufficient space for their accommodation on the bottom of the nest, were piled in two layers, one above the other. In the first nest the relative

number of eggs in the two layers was not noted. In the second there were five eggs in the lower and four in the upper layer.

All these nests were found by watching the birds while building, a task of no slight difficulty in dense spruce woods where the light was dim, even at noonday, and mosquitoes were so numerous as to make it torture to remain still for any considerable length of time. Moreover, the movements of the little architect were erratic and puzzling to the last degree. One moment fluttering at the end of a branch, her bill filled with a mass of building material, or tugging at the loose end of a shred of bark or moss, the next hidden from sight among the dense spruce foliage, now flitting rapidly from tree to tree, again dashing back and forth between two adjoining trees, the female would often appear and disappear a dozen times and at as many different places in the course of a minute or two. The chief difficulty, of course, was to make out just when and where she deposited her burden, which often vanished in the most unaccountable way. We finally found that her almost invariable custom was to approach the nest by short flights and devious courses, and upon reaching it dash in, deposit and arrange her load in from *two to four seconds*, and at once dart off in search of more. When it is considered that the nest, even at a distance of only a few yards, was indistinguishable from hundreds of dark clusters in its own and neighboring trees, and that the bird during her flights to and from it often entered and remained quite as long within several of these clusters as in the nest itself, the difficulties of the case will be better understood. As a matter of fact we did not in a single instance settle the exact position of the prize until we had watched the birds for several hours and spent much fruitless time in climbing to the deceptive clusters already mentioned.

In her flights after building material the female sometimes went a distance of a hundred yards or more, but oftener she confined her quest to the trees within a radius of fifty yards or less of the one which concealed the nest. She was invariably followed closely by the male who, however, did not assist her in any way other than by singing almost incessantly, in an undertone. In the case of the three nests which we took, and a fourth which we must have been very near to but did not find, the males in every instance first attracted us to the spot where their mates were at work by this peculiar, subdued song. It was often

repeated almost incessantly dozens of times in succession. Should it prove to be, as seems probable, an invariable and characteristic accompaniment to the operation of nest-building its value as a clue to the neighborhood of the nest and the presence of the female is worth bearing in mind. Besides the song* both birds uttered frequently a low *ti, ti, ti* which seemed to serve as a call to indicate one another's presence or position.

In each instance the sitting female left her eggs as soon as the movements of the climber began to shake the tree, but when he neared the nest she with her mate showed the utmost anxiety and boldness, approaching within a few feet of his head and uttering the *tzee-tzee-tzee* note incessantly.

To conclude, the nests above described are, I believe, the first that have ever been taken in Massachusetts, although my finding the brood of young birds at Winchendon in 1887 was, of course, prior and equally conclusive proof that the species breeds within our limits. That it breeds regularly at Winchendon is highly probable, but, as already stated, there are reasons for doubting that it is always as common there as it was in 1888. About July 1 of this latter year, it was discovered by Mr. Faxon in considerable numbers, and unquestionably breeding, on the northern side of Mt. Graylock in Berkshire County where I searched for it vainly in 1885 although, to be sure, I did not visit the particular part of that mountain where it has since been found. Hence my failure to meet with it affords no proof of its absence or even rarity there in 1885. Nevertheless I cannot help thinking that the number of birds which nested the past season in both Berkshire and Worcester Counties may have been exceptional.

Another point worth considering is the approximate date at which this Kinglet may be assumed to nest. The fact that the nest found by Mr. Minot† among the White Mountains of New Hampshire in 1876 contained young as late as July 16, taken in connection with my observations in 1888, would seem to indicate that the bird is a late breeder and that somewhere between

* This begins with a succession of five or six fine, shrill, high-pitched, somewhat faltering notes and ends with a short, rapid, rather explosive warble. The opening notes are given in a rising key but the song falls rapidly at the end. The whole may be expressed as follows: *tsee, tsee, tsee, tsee, ti, ti, ter-ti-ti-ti-ti*.

† Land and Game Birds of New England, p. 56.

June 10 and 17 would be the best time to find the female building (it would be next to useless to search for the nests after they are completed), while June 25 to July 1 should be early enough to expect full sets of eggs. But opposed to this conclusion are the early date (June 26) at which I found young on wing near Winchendon in 1887 and the record * by Mr. Charles H. Andros of a set of ten eggs taken by Mr. Cheney at Grand Manan, New Brunswick, "on or about June 1." It is possible that the species rears two broods in a season but, on the whole, I am inclined to believe that its time of nesting is irregular, varying at different places or at the same place in different years.

Auk, V, Oct., 1888, p. 331-44.

BIRDS OF CARROLL COUNTY, INDIANA.

BY BARTON W. EVERMANN.

CARROLL COUNTY lies in the northern central part of Indiana, about one hundred miles south of Lake Michigan. The chief river of the County is the Wabash, which flows southwest across the northwest part of the County. The greater part of the County lies to the east and southeast of the river, and is drained into it by Rock, Deer, and Wild Cat Creeks. The Tippecanoe River flows for a few miles through the northwest corner of the County, its direction being almost due south.

All that portion of the County lying to the east and southeast of the Wabash (embracing ten of the thirteen townships) was originally very heavily timbered, and there yet remain many uncleared acres. The chief forest trees are beech, red and white oak, elm, ash, poplar (tulip), sycamore, maple (hard and soft), walnut (black and white), hickory, — in short the usual deciduous trees of the ordinary forest of central Indiana. There are practically no pines or other evergreens in the County, except a very few along the Tippecanoe. The three townships lying on the right bank of the Wabash differ materially from those on the other side. Adams, the most eastern of the three, is inclined to

* *Ornithologist and Oölogist*, Vol. 12, p. 203.

322. *Golden-crowned Kinglet [Regulus satrapa]. Its Nest and Eggs.* By Harry Merrill. *Ibid.*, VI, p. 58.—On the identification of a nest and eggs described by the late Dr. Brewer in this Bulletin for April, 1879 (Vol. IV, p. 96). O. H. O.

960. *Perhaps Nest and Eggs of Regulus Satrapa.* By W. T. Emmet. *Ibid.*, Jan. 1, 1885, p. 445.—Found near Lennoxville, Can., in spring of 1879, and doubtless correctly assigned. For. & Stream XXIII

1408. *The Relative Weight of the Brain of Regulus satrapa and Spizella domestica compared to that of May.* By Joseph L. Hancock. *Ibid.*, No. 4, April, 1887, p. 389. Amor. Naturalist, XXI

322. *Golden-crowned Kinglet [Regulus satrapa]. Its Nest and Eggs.* By Harry Merrill. *Ibid.*, VI, p. 58.—On the identification of a nest and eggs described by the late Dr. Brewer in this Bulletin for April, 1879 (Vol. IV, p. 96).

TAMENESS OF THE GOLDEN-CRESTED KINGLET. (*Regulus satrapa*). During the last days of September, while passing through the straits of Mackinaw, on a steamboat on my annual collecting trip to the upper peninsula of Michigan, I was struck with the utter disregard manifested by the Golden-crested Kinglet for the presence of man. One morning we found our boat invaded by eight or ten of these birds. It was not long before they found their way into the cabin, attracted there by the large number of flies, and at dinner time they caused no little amusement and some annoyance by perching on the heads of the passengers and on the various dishes which covered the table. I caught flies, which they would readily take from my hand with a quick flutter. I caught several, and even when in my hand, they manifested no fear, but lay quiet and passive. By next morning they had taken their departure.—*A. H. Wood, Painted Post, N. Y. O. & O. IX, May, 1884, p. 62*

Calendula

Regulus calendula.

April ^{-B.} 15^{1/2}* (Fair) - ^{B.} 16^{2/3}* - ^{Cy, B.} 20* - 21^{1/2}* - ^{Concord} 25^{1/2}* - 27* 1891.

" 5^{1/2}* - 7^{1/2}* - 26^{1/2}* - 30^{1/2}* Concord 11^{1/2}* 1892. ^{Col.} 7^{2/3}* R. H. M. 1892.

" ^{Arlington} 7^{1/2}* (Apr. J.) 14^{1/2}* ^{Arlington, Oct. 20. 1892} 21²* - 27⁵* - 29⁵* - 30⁷* 21¹* - 23¹* - 24^{2/3}* - 25³* - 26¹* - 27³* - 28⁵* - 29³* - 30¹* Concord 1893

" 16^{2/3}* ^{29¹⁰} 1894 ^{Arlington (Apr. 17)} 1894

" 26¹* 28¹* 30¹* 1895 1895

" 14^{2/3}* 15^{2/3}* 17^{1/2}* 18^{1/2}* 19¹* 23^{2/3}* ¹⁸⁹⁶ Concord 1896 ¹⁸⁹⁶ 25¹* Concord

" ¹⁸⁹⁷ 8^{1/2}* ¹⁸⁹⁷ 22^{2/3}* (W. Bartlett) Concord, 1897. ^{Concord} 30^{1/2}* 1898 ¹⁸⁹⁸ 23^{2/3}* ¹⁸⁹⁸ 25^{1/2}* ¹⁸⁹⁸ 26^{1/2}* 28¹* 29¹* Concord 1899

May ^{Col.} 5^{1/2}* 1889

" 1^{1/2}* - 2²* - 3¹⁰* - 4²* - 5²* - 6⁵* - 7³* - 8⁴* - 9²* - 10³* Concord 1892

" ^{Col.} 1^{1/2}* 1893 1²* 3¹* 7²* Concord 1898 4¹* 1899

R. calendula.

Sept. 28^{1/2}* (May) 1891

December ^{Fresh Pond} 23^{1/2}* 1899

Oct. ^{Cy} 17^{1/2}* 19^{1/2}* 20¹* 1891.

" 10¹* 14¹* 25¹* Concord 1892

" 13¹* 19¹* 20¹* 25¹* Concord 1894

" 18¹* 21¹* 31¹* Concord 1895

" 20¹* Concord 1896

" 8^{2/3}* ¹⁸⁹⁸ 10¹* Concord 1898

" 15^{1/2}* 29^{1/2}* Concord 1899

Regulus calendula

1892 Mass.

Oct. 11

Cambridge - Two in my garden this evening flitting about in dense shrubbery. Both so far as I could see had plain crowns but one sang, sotto voce, unceasingly. After watching them for a few minutes I "scruped" and they at once came out of the thicket and began skipping about among some rose bushes which bordered the walk in which I was standing. I subdued the "scruping" to a faint, intermittent squeaking when they came near and near until at length one of them, quite overcome by curiosity, flew directly upwards and joined within less than 2 ft. of my face repeating this many times, and once nearly alighting on my arm but just as its feet touched my coat flew changing its mind. What nervous, animated little creatures these Kinglets are! I was struck by the large bin and gentle, confiding expression of their dark eyes; perfectly black eyes they looked and large enough for a good bird Sparrow or Thrasher.

One of these birds pecked repeatedly at some seeds vessels of a flowering plant but I could not see that it secured any of them ^{seeds}. Both birds captured insects which I was watching them ^{pick} sometimes from the under sides of the leaves, often taking them in mid air by a short outward & upward flight in the manner of a Flycatcher.

Regulus calendula.

Concord, Mass.

April, 21, 1893.

April

The white pine on Susan's lawn I found Red, and
two Chickadees accompanied by a Golden crested Kinglet. The
with a Red crown chattering not far off, also in
a white pine. Thus I first heard the chatter family
through its noisy, thus I mistook it for the
screaming of a White-throat. There is certainly some
resemblance in the sound of its first note to that of a White-throat.

Regulus calendula.

Concord, Mass.

Chatters like a Solitary Vireo.

1898. Just after breakfast a Solitary Vireo was in full song
May 1. near the crest of Ball's Hill and a Ruby-crowned Kinglet was
chattering and singing among the dense pines just behind this
hill. I was struck by the close resemblance between the
chatter and that which the Solitary Vireo utters when its
nest is approached.

Eastern Massachusetts.

1899. On the 23rd W. Faxon and Ralph Hoffmann met with a Ruby-
December. crowned Kinglet at Fresh Pond. It was in the arbor vitae
hedge that borders the driveway to the hemlock grove, but it
afterwards flew to an apple orchard near by. Its characteris-
tic chatter was heard several times but the bird's sex was
not definitely ascertained. This is the only December record
known to me.

Last Dates Migratory Birds observed by
E. D. Wintle, Fall 1885, Montreal, Can.

Oct. 18. Ruby-crowned Kinglet.

O. & O. XI, Mar. 1886, p. 44

Birds of Toronto, Canada,
by James H. Fleming.
Part 11, Land Birds.
Auk, xvi, Jan., 1907, p. 86.

282. *Regulus calendula*. RUBY-CROWNED KINGLET.—Abundant migrant, April 20 to May 11, and October 5 to 20; earliest spring record April 4, 1890, latest May 22, 1894; latest fall record November 3, 1907.

Birds within Ten Miles of Poir.
de Monte, Can. Comeau & Merriam.

5. *Regulus calendula*. RUBY-CROWNED KINGLET.—A male was shot June 4, 1882.

Bull. B. C. O., 7, Oct., 1882, p. 28

Alex, Summer Birds Bras d'Or Region
Regulus calendula.—Common.

Auk, 8, April, 1891, p. 136

Newfoundland Notes.
Ruby-crowned Kinglet (*Regulus calendula*). A few were seen near the Government House, April 16th.

C. H. Merriam Locust Grove
New York. O. & O. VIII, June, 1883, p. 43

Birds of Dead River Region, Me. F. H. C. 7.

7. *Regulus calendula*, (Ruby-crowned Kinglet).
This species was not common. During the winter
I did not observe it at all. Saw it only in the
evergreen woods about Eustis.

O. & O. XI, Aug. 1886, p. 114

Birds Obs. at Moultonboro, N.H.
July 2.-Aug. 11, 1883. F.H. Allen

Regulus calendula.—A few seen.

Auk, VI, Jan., 1889, p. 79

New Hampshire (Waterville)

Regulus calendula^{8.}

1884.

July 9 W. Faxon tells me that A. P.
Chadbourne has a Ruby-crowned
Kinglet shot at Waterville N. H.
July 9

1892

July 10 *Regulus calendula*

Christopher Seymour tells me

that he has a Ruby-crown

Kinglet shot at

Sunapee Lake, N. H., July 10,

1892. He has a 110 ft.

altitude in the hills where

it was shot.

See Nov. 11, 1892, Essex

Regulus calendula 11.

Spring arrival,

Cambridge, Mass.
April 14, 1883

One was singing repeatedly this morning in Mr. Russell's apple orchard. It is the first of the season.

92. " Calendula, Oct. 5th E. Mass. 1885.

Mass. (near Concord). 1887

1887
April 12th ²⁸/₂

* = singing

1902

Nov. 16

Regulus calendula

Chestnut Hill
Mass.

One seen by Mr. Louis A. Shaw.

Auk, XX, Apr., 1908, p. 218.

Regulus calendula

Mass. (near Cambridge).

1887

Oct. 5th

1888

Apr. 8th - 24th, 25th, 28th Belmont (Chad.)

Oct. 22nd - 23rd

Regulus calendula

Birds of Bristol County, Mass.
F. W. Andros.

15.

Regulus calendula Ruby-crowned Kinglet.
Fall and winter visitor, rare.

O. & O. XII, Sept. 1887 p. 141

Winter Birds in South-eastern Mass.
Harry G. White

14. Ruby Crowned Kinglet. Rare in winter.
One bird recorded at Highland Light, on
January 15th.

O. & O. Vol. 17, June, 1892 p. 85

Birds observed in Naval Hospital
Ponds, Brooklyn. G. H. Coues

21. *Regulus calendula*. RUBY-CRESTED WREN.— Common in spring
and autumn.

Bull. N. O. C. 4, Jan., 1879, p. 32

Birds of the Adirondack Region.
C. H. Merriam.

10. *Regulus calendula* (*Linn.*) *Licht.* RUBY-CROWNED KINGLET.—
Occurs during the migrations.

Bull. N. O. C. 6, Oct., 1881, p. 226

Regulus calendula.—Very common during the migration from March 21 and numerous three days later. They continue to dance for about a month, when there was a diminution in numbers. Many pairs breed around the Fort, apparently placing their nests in the firs. On July 9, at Beaver Meadows, a female was noticed feeding her fledged young that were sitting close together on a dead tree, in which the nest was probably placed although, I do not know. In July and August this species was found in abundance north of the valley up to a height of about five thousand feet. It is of either species were seen in the next five hundred feet, *olivaceus* occurred. These heights were determined on several occasions by barometric observations, and the distinct range of the species is very noticeable.

Auk, V. October, 1888, p. 86

The Two Species of Kinglet as observed at Raleigh, N. C.

BY C. S. BRIMLEY.

Ruby-crowned Kinglet, (*Regulus calendula*). This active little bird is quite common here during the winter months; arriving in the fall about October 19th, and becoming plentiful a few days later. It remains common till the first week in April, the last specimens being usually seen about April 13th, a week or ten days after the bulk have left us for the north.

It is very sociable in its habits while here, being generally found in large numbers in the pine woods in company with the Gold-crowns, Brown Creepers, Pine Warblers and Brown-headed Nuthatches, all of which birds associate together during the winter months in this locality, feeding on pine seeds and whatever insects they may find. It is also found sparingly in other situations, but rarely in any numbers, one or two being often found in the alders along the banks of streams or in the oak and mixed woods, but rarely more in any one spot.

Though quite tame and fearless in disposition when undisturbed, I have often noticed, both with this species and the Gold-crown, that when one or more are killed, the remainder of the flock get very wild, keeping to the tops of the trees and flying rapidly forward when approached, uttering all the while their faint chips, which with the exception of a sort of chatter, something like that of the Carolina Wren, is the only note we hear here till they burst into song about the end of March. After being alarmed as above by some of their number being killed, they will generally if unmolested become nearly as tame as ever in from half an hour to an hour or more's time, but in this case easily take alarm again.

During the early part of its sojourn with us, most specimens seem to be in full plumage, very few lacking the crownpatch. Later on the number of dull birds seem to increase somewhat, though my observations make me believe that more than one-half of those that stay here are in adult plumage. In this connection it seems worthy of remark that on January 15th of this year, my brother shot a male with the crownpatch orange, and two more, also with orange crownpatches, on the 18th. Several were also shot a little later having the crownpatch not so bright as usual, inclining somewhat to orange, which lead me to think that possibly the orange patch might occasionally be orange at first, turning to red afterwards; and I was also inclined towards this idea by the fact that these specimens which had the crownpatch orange had the orange feathers brownish, like the rest of the upper side at their tips.

Gold-crown Kinglet, (*Regulus satrapa*). Rather more abundant if anything than the Ruby Crown, and very similar in habits. This handsome little bird arrives here about the same time as its relative, but leaves a week or ten days earlier; all departing at once and none seeming to straggle behind as in the case of its congener. This species is more strictly gregarious than the Ruby Crown, solitary individuals

RUBY-CROWNED KINGLET. Noticing Mr. Jencks' query in the June number of the O. and O., I write to say that the female Ruby-crowned Kinglet does occasionally have a well-marked crown-patch. I know of three such specimens, at least two of which were dissected by a competent person. In all three, however, the color of the bright feathers is orange, not scarlet as with the male. During my own collecting I have never taken a female which had the crown otherwise than perfectly plain, and it is certain that this condition is the normal one, even among fully adult birds. Hence Mr. Jencks' note may be taken in the main as a timely correction of a long established error.—*Wm. Brewster, Cambridge, Mass.* O. & O. VIII. July, 1883. p. 56.

RUBY-CROWNED KINGLET.—A few years ago the query arose whether the female *Regulus calendula* had a red crest. The matter was apparently set at rest by Dr. Coues who stated that both sexes were thus adorned after the first year. I have asked several ornithologists regarding this matter and am unable to find any one who has seen a female thus decorated, though all seem inclined to consider the matter settled. I have taken quite a large number myself and fail to find any but males with crests. Will my fellow collectors use their opportunities this spring? Proof of this characteristic in a common species should rest with more than one witness.—

Fred. T. Jencks, Providence, R. I.
O. & O. VIII. June, 1883. p. 44

Beckham on the plumage of *Regulus calendula*.†—Respecting the presence or absence of the brightly colored crown-patch in different individuals of this species, Mr. Beckham, after an examination of much material, reaches the following conclusions: "(1) that the female does not have this brightly-colored crown, and (2) that some young autumnal males (very likely a large majority of them) do possess this ornament."—J. A. A.

Auk, 3, April, 1886. p. 266.

† Remarks on the Plumage of *Regulus calendula*. By Charles Wickliffe Beckham, Proc. U. S. Nat. Mus., Vol. VIII, No. 40, pp. 625-628, Dec. 7, 1885.

A Yellow-crowned *Regulus calendula*.—April 27, 1890, I shot near Laurel, Md., an adult male 'Ruby-crowned' Kinglet which has the crown-patch pure orange-yellow instead of vermilion, the plumage being otherwise quite normal. The crown-patch is very well developed, being more extensive than in the average of specimens. — ROBERT RIDGWAY, Washington, D. C.

Auk, VII. July, 1890, p. 292.

Auk, XII, April, 1895, p. 181.

An Albino Ruby-crowned Kinglet.—On February 4 I shot, near this place, a nearly perfect albino Ruby-crowned Kinglet (*Regulus calendula*). The bird was a female and the only one I have seen here for some time. The body is pure creamy white, with a wash of lemon yellow on the rump; head grayish brown, with numerous flecks of white. The edges of the tail and wing feathers are edged with yellowish white, giving a frosty appearance to the closed wing and tail and hiding largely the otherwise dusky feathers. — A. W. ANTHONY, San Diego, Cal.

Notes from Connecticut

Regulus calendula. A young male with the crown patch unusually small and orange-buff instead of scarlet-vermillion was collected in New Haven on Oct. 28, 1904. The entire plumage of this bird is unusually gray and the broken eye-ring, lores and forehead are distinctly white; but as it has the nasal tuft, slender, longer bill, and the measurements of *calendula* I do not think it is a hybrid with *sarapa*.

Louis B. Bishop, New Haven, Conn.
Auk, XXIII, July, 1906, p. 345.

THE SONG OF THE RUBY-CROWNED KINGLET.

By DR. MORRIS GIBBS.

"A bird's song is the most beautiful music in the world." These are the words of my friend, Stewart White, and he echoes the sentiment at least of all refined lovers of Nature. It is not necessary that a person should be an ornithologist in order that one may appreciate the melody from Nature's conservatory. On the contrary, it happens lamentably often that individuals who aspire to a position of scientific fame as writers on the subject of birds, are sadly deficient in the comprehension of many points of interest alike pleasurable to the aesthete and utilitarian. Comprehensively, then, the songs of birds are to be studied by ornithologists and lovers of harmony in the woodlands and fields, and to those having cultivated the ear much pleasure is derived from observation and comparison of the various notes, even where the several performers are not identified. There is no study more pleasing to the ear in our groves than to become acquainted with the voices of our feathered friends, not only in song, but in all moods and passions, represented by call notes indicative of love, excitement and fear. These call notes, as well as the songs, should be considered not only from the standpoint of musical superiority, but as well from the sentimentality emanating, as must result from associations with these delicate yet vivacious dwellers of our forests and fields. I can readily conceive that associations of a tender, refining nature, may be absent in some persons, but to the observer, the one who enjoys the many pleasures of out-door life, the songs of birds are ever a fruitful source of pleasing retrospection of agreeable days in the woodland.

One of the earliest songsters of merit which greet us in the latitude of New York City and well west on the parallel is the ruby-crowned kinglet. Coming as it does about April 20, often earlier, the medley of joyous notes are doubly welcome, and when heard on a cold, disagreeable day, the song seems to inspire one with hope in waiting for warmer days and fairer skies.

The song of this dainty, sprightly-winged gem, is a sweet warble of great penetration,

but it is still in no way coarse or stridentulous in any of its notes, and so ecstatic is the clear, rippling melody, that one has to pause and with visible anxiety listen to its repetition, if he be a lover of music and vivacious, changeable warblings. Never a break or flaw in the song of this bird, and the first note of morning is as clear and full as the last at sunset.

These true musicians of Nature have no need of practice to fit their voices for a woodland concert, and, even when all sing in chorus, there is not a false note uttered, though there may be twenty species in this choir of varied singers.

The ear of the true musician is from necessity attracted by the quavering, varied notes, as often as repeated by this sweet singer, and to my mind it takes a high rank for excellence among our many fine singing birds. The notes, as with most birds, are difficult to describe, but can be expressed with the pen, so that one familiar with the refined song can recognize it at a glance, even from this poor imitation. It begins with a few low, half-articulate notes, soft and melodious, rises to quite a pitch, and ends with a trembling, exquisitely-modulated warbling. It is unlike the song of any other bird of my acquaintance, and no comparison that the writer can draw could properly furnish a description of this elegant songster's ditty. In our inefficient way we may describe the notes on paper, trusting for leniency on the part of readers, and assuring those who are better educated in bird melodies than I that the interpretation is my best effort. The refrain runs in this wise: *Choi choi choi—qui qui qui—cheedledee cheedledee cheedledee.*

The notes begin and end abruptly, and often, when half finished, the song stops, and the active fellow gives voice to a few energetic staccato call notes.

The ruby-crown does not stop with us, being merely a transient in my State, and passing far to the north to nest. Of its nesting habits but very little is known, although the birds are abundant in their vernal and autumnal migrations.

Nature's Realm II vol. 1, p. 10
p.

1888

Wren-like scolding note

April 25

Waltham: - The report of my collecting pistol in a dense growth of pines started up a Ruby-crown who for a minute or more scolded me incessantly in very Wren-like tones - a harsh grating chatter in fact. I did not see the bird, there were a Cooper and Golden-crest in the same woods. In another and similar grove of pines I found a ♂ Ruby-crown in company with a Golden-crest and two Chickadees. Yesterday I shot a ♂ *calendula* in the "aeroph hoarse" it was in full song and was at once feather and plume, shown seen to-day was very tame.

The Singing of Birds. H. P. Bicknell.

Regulus calendula. RUBY-CROWNED KINGLET.

This little bird sings regularly while it is with us in the spring and fall. In spring its song dates from its first arrival (earliest record, April 7), and is frequent until the majority of the birds have passed northward. Shortly after it has last been heard (latest record, May 1), the species has disappeared; but sometimes the last song gives the last record of its presence.

After their re-appearance in September these birds usually remain silent for a week or more—in a few instances I have heard the song on the day of arrival—after which their song may be heard at any time before the final days of their stay. Autumnal data of their singing are comprised between September 20 and October 21. If, however, the species be uncommon the song may not be heard at all in the latter month.

Though the smallest of our song-birds, and—excepting the Hummer and its own near relative, the Golden-crowned Kinglet—the least of all the birds that visit us, the Ruby-crowned Kinglet possesses marked vocal power. Its clearly whistled and cheerfully modulated warble would not be a discreditable performance from a much larger bird.

Its ordinary notes are short and sharp, and though not loud may, under the influence of excitement, be prolonged into a harsh Wren-like chatter.

Auk, I, April, 1884, p. 134.

Nest and Eggs of the Ruby-crowned Kinglet (*Regulus calendula*).—My friend, Mr. Frank W. Ritchie, of Ottawa, who is at present attending Bishop's College, at Lennoxville, Quebec, has kindly furnished me with the following description of these rarities for publication in 'The Auk.'

"A nest of the Ruby-crowned Kinglet was found by two friends of mine, near Lennoxville, on May 15, 1882. The nest was pensile, and was attached to a branch of a small tree, a few feet from the ground. It was composed of fine moss, evenly and firmly felted, and was lined with bright feathers of the Wild Pigeon. The inside was almost entirely hidden from view by the upper feathers of the lining being caught at the edge of the nest; curving gracefully toward the centre, their points almost meeting, they left but a small opening. The nest measured ten inches in circumference outside, and was three inches in depth inside. It contained nine eggs, one of them a Cow Bunting's. One of the Kinglet's eggs which I examined, and which is still preserved in the Museum of Bishop's College, measures .53 X .40. It is of a dirty creamy-white ground-color, clouded with small, faint spots of a darker tint, which are irregularly distributed over the entire surface, excepting near the larger end, where there is a band of dull yellowish-brown. The centre of this band is darkest, the color gradually lessening in intensity toward the edges.

"The identification of the parents was nearly perfect. My friends were very familiar with the species, and examined these birds several times, as they sat on the nest or perched on the adjoining boughs."

I am informed by Mr. Ritchie that the nest has been destroyed and only the one egg remains of the clutch. Through Mr. Ritchie's kind office the President of the College has courteously permitted this egg to be sent to me for examination so that I am enabled to verify the description given.

Mr. Ritchie states that another of the eggs of this clutch which he had compared with the one described was of exactly the same size, color, and markings.—MONTAGUE CHAMBERLAIN, *St. John, N. B.*

Auk, I, Jan., 1884, p. 90-91.

Halifax Correspondence

May, 30, 1889

26

After watching the Ruby-crowned Kinglet for over a week building the nest, and just when they had it completed the female disappeared, and I feel badly, the nest is now finished, but the birds gone. I cannot account for it; it is the first I ever discovered. The ♂ kept about for a few days after the ♀ left, and I shot him, and have him set up. I can get the nest but no eggs.

O. & O. XIV, June, 1889 p. 79. *Harry Austen*
Nest and Eggs of the Ruby-crowned Kinglet.

27

On June 9th, Harry Austen secured a nest and eleven eggs of the Ruby-crowned Kinglet at Dartmouth, Nova Scotia. His notes of last year will be remembered by our readers. His record stands first.

O. & O. XV, June, 1890, p. 98

June 23.—He found a nest of the Ruby-crowned Kinglet, (*Regulus calendula*), in a dense fir thicket placed on the limb of a tree close to the trunk, and about twelve feet from the ground. In it were four young with wings almost fit for flight.

St. John, N. B. M. Chamberlain.
O. & O. 1882. VII. April, p. 112.
New Sheet

Nest and Eggs of the Ruby-Crowned Kinglet.

24.

On the second of June last year, I wrote concerning the taking of the nest of Golden-crowned Kinglet with nine eggs, also having discovered nest of Ruby-crowned Kinglet but as explained at that time, the latter, after having completed the nest, deserted it. I remarked in the end of letter that I expected to take one yet, and I now have pleasure in advising that the fact has been accomplished, and the nest and eggs are before me while writing.

On the ninth of June I started out to hunt for a Hummingbird's nest that had been seen close to my house, and I soon located the bird and watched her movements from about 9 A.M. until 12 M., but I did not succeed in discovering the nest. She was too quick on the wing, and the eye could not follow her flight. However, while watching her a pair of Ruby-crowned Kinglets came along and my attention was given to them. After hopping around overhead for a little while they flew to some black spruces. I immediately started after them and in a short time had them in view again, then I sat down again, lighted a cigar, and took things easy, for I knew the nest could not be far away.

In a little while the ♀ disappeared in a thick clump of tall, young, black spruces; I followed up and looked and climbed every tree in the vicinity, but it was no use. Meantime, the ♂ was flitting from the top of one tree to another, uttering that queer sort of a whistle that I do not know how to describe, except that it is unlike any other bird's note that I know of, and easily distinguished from all others when once heard and known.

In a little while the ♀ appeared again, and then I made up my mind that that nest must be found, so to work I went, and at 2.40 P.M. I found the nest, but it was only accomplished by climbing the tree, as the nest could not be seen from the ground, it being built near the top of a thick, black spruce tree, and this time it was built *on the limb*, and not underneath as described by me last year. It was not on the branches of the limb but placed on the *bare* limb about one foot out from body of the tree, and about fifteen feet from the ground when I saw contents of nest, eleven eggs. I got down the tree and watched the old birds. After I had seen the ♀ go on the nest twice I shot her, and then shot the ♂, then taking the nest left for home. On the way back I found the nest of a Wood Pewee with four eggs, which I took to-day, and shot ♀ bird. This nest is made entirely of hen feathers, and is one of the prettiest I have ever seen.

I might say that before shooting the Kinglets and after having discovered the nest I watched the birds for over an hour, as I wished their identity to be beyond dispute. The nest is built on the outside with moss and lined with feathers. It measures 3 inches across the top on outside, and $1\frac{1}{4}$ inches inside, and $1\frac{1}{2}$ inches deep inside. I have blown the eggs which were badly incubated, but have

made a fair job of it, and am satisfied that they are good enough for any collector.

On the 14th inst., I found the nest of another Golden-crowned Kinglet, but unfortunately it was full of young. This time the nest was way up in the tiptop of a tall, straight black spruce, and built underneath the limb and clinging to the twigs, just like the two nests I discovered last year. This makes in all four nests of the Kinglets I have taken, and in every instance they have been built on black spruces, three of them placed underneath the limb, one on the limb.

H. Austen.

Halifax, N.S.

July 15, 1890, p. 105-106

Further Notes on the Nesting of the Ruby-Crowned Kinglet.

29.

Yesterday I was to the woods all day hunting up above species. In knocking about I heard a ♂ getting off that peculiar note of his, and soon located the little chap; that done, I sat down, lit a cigar, and waited for something to turn up. In a little while the ♀ came along and by her actions I know the nest was near, and full of young. When I considered I had the spot pretty well fixed I began to climb the trees and in one hour and ten minutes I had the nest. It was as I expected, full of young, and as near as I could make out the number was nine. The nest was the prettiest one I have yet found, being lined with Partridge feathers, and placed on the *straight limb*, about twenty-five feet from the ground, and about twenty inches out on the limb. This nest I intend to take, with the young, also the other one I have located, named in my last, and mount the whole business with the old birds.

H. Austen.

July 16, 1890, p. 111.

H. Austen
0.7 & Vol
XVII July
1892 p. 97

June 1. To woods this morning; located the ♂ Ruby that I was after yesterday and

32.

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*Regulus
Calendula*

Followed him about from nine o'clock until half past twelve, then gave it up. I walked about three hundred yards from where I had last left the ♂, when I heard him again just behind me, so I turned about and went back, looked at black spruce that I thought might hold nest, went up it and just as I got near the top down came the ♀ and that settled it. The nest was underneath the branch, suspended from the little twigs and to my great satisfaction, contained ten eggs. I got the whole business safe to the ground and as it was then quarter of one, I left for home perfectly satisfied with my morning's work. The nest is a fine one and the eggs were quite fresh and were blown nicely.

June 4. To the woods this afternoon. Located another ♂ Ruby and put in the whole afternoon trying to find nest, but did not succeed; but while tramping to and fro through the swamp, I nearly crushed a bird with one of my number twelve boots and looking about soon had the nest. This held five eggs, white ground, spotted with red. The bird kept up high overhead and being new to me, I left for home, got the gun, started her off nest again and then gathered her in and am sending the skin to you for identification.* The stomach of bird was full of flies and a few spiders by way of variety. I did not see the ♂. The nest was in the swamp, raised up from the wet ground and built in underneath a little hillock and right by where I found the Yellow Palm Warbler's nest last year. I also found another Olive-backed Thrush nest just built up in top of little spruce.

June 5. To woods all day after the Ruby again, and this time I succeeded in placing the nest or rather the place where the bird intends to build it, as there are now only a few little bits of moss that cannot be noticed except by aid of the glasses. The ♀ is hard at work and

* Nashville Warbler.

the ♂, as usual, puts in the time singing. Th's nest is fully two hundred yards away from where the ♂ led me to believe it was.

June 6. Ran out this evening to see how the Ruby was getting on with her nest found on morning of the 5th and was surprised to see it completed on the outside, which shows how hard the bird must work and with what rapidity they build their nests. Also found nest of Summer Yellow Bird just about built.

June 8. To woods this afternoon; took nest of Song Sparrow with four eggs. Looked at Thrush nest found the 4th; it held two eggs to-day. Watched the ♀ Ruby found building on 5th. She is now carrying feathers and lining the inside of her nest. Took six eggs of Golden-winged Woodpecker.

June 12. To woods all day. Took Thrush Had a look at Ruby found building on the 5th and nest is now complete and she is on it.

June 18. Out this afternoon and examined for first time the inside of Ruby Kinglet's nest found building on 5th, and that the ♀ was lining with feathers on the 9th. This held one egg to-day. This bird appears to me slow and late.

incubated. I had another hunt for the Ruby Kinglet that I looked for all day on 7th and 8th and found it. Strange to say, it was on a black spruce that I had gone up and looked over time and again. Nest was out on end of a beasty thick branch that hung down at the end and hid the nest. The nest was right in the thickest part and was fastened by the sides to the little twigs and was suspended. I could not see eggs as the nest was hard to get at and the opening of nest was covered over completely with feathers and lined with feathers all the way down on inside and bottom and the eggs were hid from view. First I have ever seen like that; but I could feel the eggs with my finger, so I took nest and on arrival home found it contained six eggs all of which were incubated, but I succeeded in blowing them finely. Am glad I found this as I had worked hard for it. This was a good day for Yours very truly,

June 19
p. 99.

Dartmouth, N. S.

H. Austen

O. & O Vol. 17, July, 1892 p. 97-99

On my way home I took nest of Junco, with four eggs.

June 24. Ran out before breakfast this morning to look at Ruby Kinglet's nest that I found building on 5th and that held one egg on the 18th (when it was examined by me for the first time), and to my surprise it still held one egg, which was cold, and the inside of nest damp, and I could see, for some reason or other, that the birds had deserted it, and I was sadly disappointed. However, still hearing the ♂ singing close by, I was satisfied the ♀ was not far off and had built another nest, so I went to work, and in one hour and ten minutes I had it, and this time it was up 20 feet, near the top of a tall, slim black spruce, and contained six eggs. I did not take it, as I wished to see if set was complete. On my way home, I found a Hudsonian's nest with four young, all feathered and ready to fly.

June 25

¹⁴⁷² I also found another nest of the Ruby Kinglet, which was full of young, and I was pleased that the old birds had managed to hide it so well, as I had been after it a good many times before, and the comical part of it is that it was on a black spruce that I had gone up *twice* before, but had failed to see it. I also found a Myrtle Warbler's nest, with four young, and took a nest of the Black-throated Green, with four eggs, but regret to say they were so badly incubated that I could not save them, and the same sad fate attended another set of the same species; so from this out I shall be very careful what I take, as it is bad enough to take the nests, but sad in the extreme when the eggs and young are destroyed.

June 26. Looked at Ruby Kinglet's nest to-day that I found on 24th. It still held the six eggs, so I concluded the set complete and gathered it in. The eggs were slightly incubated, but came out all o.k. This is the *second* nest built by the same bird this season. I then went and took the first nest that this bird had built and which held one egg, but unfortunately, trod upon it while on the ground and broke the egg. I felt very sick then and

June 27

On my way home I heard the ♂ Ruby Kinglet singing, belonging to the ♀ whose nest I found building on the 5th and which held one egg, which she deserted and built another that I found on the 24th, with six eggs, and took on 26th with same number, and I was very much surprised to find the ♀ busily engaged in carrying materials for her *THIRD* nest for this season. This time the nest is way up in a

^{7.1478} very large black spruce, and out on the end (underneath) of one of the long limbs, and will be hard to secure.

June 29

returning, I went up over the ground where I found and took the Ruby Kinglet's nest on 19th with six eggs, and hearing the ♂ about, I went to work and in three hours and seven minutes I had located the spot on which the ♀ had commenced to build her *second* nest. I saw her working at it, and she has been at it for but a short time, as I can just make out the bare outline of the nest.

July 2

eggs, I find the boys have destroyed. The Ruby Kinglet nest found building on 29th looks to be finished now, but the one found building on 27th I see the ♀ is still working away at.

July 5

very badly incubated. I examined inside of Ruby Kinglet's nest found building 29th, and it now held three eggs.

July 9. Went out this evening and took the Ruby Kinglet nest found building 29th and that held three eggs on the 5th. Tonight it held seven eggs, so I took it, as I thought set complete. The ♀ was on the nest; nest was up about 12 feet, out on limb of black spruce, underneath the limb, and suspended. This is the second nest for this ♀ this season and was distant about 45 yards from where I took the first one on June 19, with six eggs.

This completes my notes and collecting for the season. Next year, if I am spared, you will hear from me again.

H. Austen.

Dorchester
Nova Scotia
H. Austen
O. & O. Vol.
XVII No.
10, p. 146.
(Dec. 1892)

OUR PRESENT KNOWLEDGE OF THE NIDIFICATION OF
THE AMERICAN KINGLETS.

BY ERNEST INGERSOLL.

IN the hope of eliciting from some of the many readers of The Bulletin further information concerning the breeding habits of the American Kinglets, or at least of putting them upon the alert for further information, I have deemed it well to bring together what is at present known respecting the nidification of these birds.

Of the breeding of the Ruby-crowned Kinglet (*Regulus calendula*, Licht.) not much is known, although the bird is found, at different seasons, in all parts of North America. In the Rocky Mountains it breeds among the most elevated forests. Mr. J. A. Allen found young in July near Mount Lincoln, Col.; Mr. Ridgway gives it as breeding among the peaks of Northern Utah; and Mr. Henshaw in Arizona. It is also supposed to breed in Northern New Jersey, in Western New York, in Maine, and in the islands of the Bay of Fundy. In Western New York a nest which contained young was reported to have been built in the fork of a tree. Males and females have both been observed in summer about Chestnut Hill, Philadelphia, and Mr. Gentry thinks it nests on the wooded heights along the Wissahickon. Dr. Coues, in his "Birds of the Northwest," considers that he has sufficient evidence to show a breeding-range throughout the mountains of the West, from nine thousand feet upward, thence trending eastward along the northern boundary of the United States to Maine and Labrador, and probably sending a spur southward along the Alleghany Mountains. Northwestward it reaches Alaska.

The most satisfactory information is furnished by Mr. J. H. Batty, who found a nest near the Buffalo Mountains in Colorado, on June 21, 1873, which contained five young and one egg. The nest was on the branch of a spruce-tree, about fifteen feet from the ground, and was so large "that it could scarcely be got into a good-sized coffee-cup." It is described as "a loosely woven mass of hair and feathers, mixed with moss and some short bits of straw." The egg, Mr. Batty tells me, was very much like that of the common House Wren, but a little lighter in color. Both parents were assiduously bringing larvæ of insects to the young, whose appetites were unappeasable. Mr. Henry W. Henshaw also reports finding a neatly finished nest on a mountain near Fort Garland, Col. It was built on a low branch of a pine, and the male was singing directly overhead; but although he waited some time, Mr. Henshaw did not see the female. "The nest was a somewhat bulky structure, very large for the size of the bird, externally composed of strips of bark, and lined thickly with feathers of the Grouse." Of the eggs of this Kinglet nothing further is known.

6. *Regulus calendula*. RUBY-CROWNED KINGLET. — Abundant. One of the most common song-birds, and heard everywhere. On the 20th of June I saw a female fly to a pine-tree with material in her bill for building a nest. On looking I found a nest nearly finished. On the 25th of June I took this nest with five fresh eggs, and the female showed signs of having incubated. I think no more eggs would have been laid. The nest is before me as I write, and presents the following peculiarities: It is semi-pensile, being suspended to the leaves of the pine, and to one small branch, much like the Red-eyed Vireo's nest. It is very large in proportion to the builder, and is made of the bark of sage-brush and of *green moss* very firmly twisted together, and forming a soft outer wall, of from half to a full inch in thickness. This is lined with feathers and hair. The whole nest is very soft, and has the following dimensions: Four inches deep outside; three inches deep inside; three inches in diameter outside, and two inches at the top inside, but narrowing to an inch and a half at the bottom. On the outside it is as wide at the bottom as at the top, being in this respect like a Baltimore Oriole's. It was placed at the very outermost twigs and leaves of the tree, about twelve feet from the ground. The eggs are five in number, of a dirty white color, faintly spotted all over with light brown, which becomes quite definite at the larger end. They are large in proportion to the size of the bird, and one end is very little sharper than the other. The following are the dimensions: .55 x .45, .55 x .44, .54 x .42, .57 x .45, .58 x .43.

Bull. N. O. C. 4, April, 1870, p. 41

Birds of San Juan Co., Colorado.
Frank M. Drew

7. *Regulus calendula*, *Licht.* RUBY-CROWNED KINGLET. — Very abundant from April to October; breeds from 7,500 feet to 10,500 feet. A nest, which I took July 5, was placed in the uppermost branches of a spruce — about 30 feet from the ground — in one of those dark masses where the cones grow thickest, and where it would be impossible to see your hat, were it there. The nest was very loosely placed among the outer twigs, being partially pensile, and was composed of bits of fine bark externally, and within of silk-weed shreds, moss, spider's silk, and feathers; all matted together in a compact manner, and lined with wool. It contained four young and an addled egg, the latter measuring .014 X .012 mm.; white.

Following is a description of the nesting plumage. Top of head dark, almost blackish. Back and rump a light tint of olive-green. Beneath a dirty rusty white, darkest on fore-breast. Lores lighter than rest of head. Primaries and secondaries black, edged on inner margin with white; this white is only on basal half of second primary, but gradually extends until it reaches the tip on the last secondary. Outer edge of second primary white. On the basal third of third primary, the yellow edging of the outer margins of the wing feathers begins and, slightly widening, rapidly extends so as to conspicuously color the secondaries and tertiaries. The outer webs of the latter have quite a wide whitish band which is edged with greenish-yellow. Greater wing-coverts with a terminal band of dirty white. Tail feathers black; outer pair completely so, rest with greenish-yellow margin. Tarsi marbled light and dark. Toes, above flesh color, below yellow. Bill dark above, below flesh colored, pink at base. Measurements of one example:— Length, .088; extent, .162; wing, .052; tarsus, .02; tail, .027 mm.

Bull. N. O. C. 6, April, 1881, p. 87

Ruby-Crowned Kinglet.

Found one set of eight slightly incubated eggs, immaculate, 58×40 , 57×43 , 54×43 , 54×43 , 54×43 , 53×42 , 55×43 , 53×49 . Nest on a low pine, in a clearing that had grown up to underbrush, three or four feet from the ground. It was pendant (contrary to Dr. Coues' Bds. of Colo. Val.) from the under side of some small branches that inclined downward and about four inches from the stem. It is much the shape of a "R. R. lunch station" coffee cup, but longer and flattened at the bottom, mainly of green moss interwoven with the fibrous outer covering of plants. This fibre also holding it to the twigs. A very few fine straws are woven into the lower end. The cavity is quite deep for its width, lined with soft shreds of burlaps and re-lined with soft feathers. Altogether it is a very soft concern. Outer height 6 inches, diameter 4 inches, inner depth $2\frac{1}{2}$ inches, diameter $1\frac{3}{4}$ inches. Am sure of its identity, as I stood some time with my face close to the parent on the nest. While I was packing the nest and eggs the parents were hopping about, uttering their loud cherp, cherp, cherp, cherp, that seemed to be of too much force and volume for so tiny a creature. Right here let me make a correction to my mass of mistakes in the February O. and O. I am not positive of ever seeing but one pair of Yellow-crowned Kinglets anywhere near here. Last year a pair of them alighted near me while at Murphy, and I took it for granted that they were all Yellow-crowns. This season I have paid considerable attention to the Kinglets, but have failed to see anything but Ruby-crowns, which are quite numerous in this locality.

August 1, watched a pair of Kinglets carrying food to their young, and soon discovered their nest in the top of a slender pine about forty feet up. Climbed up, but the top was so small it would not bear my weight. So I waited till the young had

Some Birds of La Platta Co. Col. With Annotations. C. F. Morrison.

11. *Regulus calendula* (Linn.), Licht. Ruby-crowned Kinglet. Common during the migrations, but breeds sparingly from 7000 up to 11,000 feet. I have not taken its eggs, but Mr. Drew has in San Juan County, and as I have seen it from the last of May to August, it no doubt breeds. The nest spoken of above was placed in the uppermost branches of a spruce, about thirty feet from the ground, in one of these dark masses where the corn grows thickest, and where it would be impossible to see your hat, were it there. The nest was loosely placed among the outer twigs, being partially penultimate, and was composed of bits of fine bark externally, and within of silk-weed shreds, moss, spiders silk and feathers, all matted together in a compact manner and lined with wool. It contained four young and an addled egg, the latter measuring .014 x .012 mm., white. A description of the nestling plumage I will keep for future publication.

O. & O. XIII, May, 1888 p. 71

flown and then felled the tree. This nest, also, is pensile but not exactly like the other. It is suspended from small twigs and connected to the stem by small fibers caught to the rough bark. It is of moss, fine grass, plant fiber, very small rootlets, and a few feathers loosely woven and lined with soft feathers. Outer diameter $3\frac{1}{2}$ inches, height $4\frac{1}{2}$ inches, inner diameter 2 inches, depth $2\frac{1}{2}$ inches.

It is amusing to note their antics when a Jay happens in the vicinity of their nest. I have often been attracted some distance by their constant chirp, and find them fluttering around some sedate looking Jay, bent on obtaining its breakfast, and at short intervals pouncing down on its back as if to impress upon him their importance. In a corner of the timber near my shanty I have witnessed these proceedings several times, and it is a strong indication that their nest is not far away.—*D. D. Stone, Hancock, Colorado.*

O. & O. VIII, Nov. 1883, p. 43-44

Short-eared Owl.

This little owl, so far as my observation has extended, seems peculiar to the coast, where among the reeds and thick marshes of the shores and neighboring islands it finds a covert from the noisy world. Having found such a place they, unlike all other New England owls, build in colonies. A locality not far from here has been from my earliest recollection a breeding place for these owls. The situation is most desirable, being a meadow or flat level with the coast, over which the tide completely flows, but leaves it entirely dry when it recedes. This meadow is covered with a coarse grass and surrounded by tall brakes and reeds. In these latter they gather together the remains of last year's frost-bitten reeds and place them in a promiscuous heap on a tussock. This is afterward hollowed out and the set of eggs is then laid. Six is the largest number I ever found, with the exception of one nest, in which I found ten; but these were

Some Birds of La Platta Co. Col. With Annotations. C. F. Morrison.

11. *Regulus catendula* (Linn.), Licht. Ruby-crowned Kinglet. Common during the migrations, but breeds sparingly from 7000 up to 11,000 feet. I have not taken its eggs, but Mr. Drew has in San Juan County, and as I have seen it from the last of May to August, it no doubt breeds. The nest spoken of above was placed in the uppermost branches of a spruce, about thirty feet from the ground, in one of these dark masses where the corn grows thickest, and where it would be impossible to see your hat, were it there. The nest was loosely placed among the outer twigs, being partially pensile, and was composed of bits of fine bark externally, and within of silk-weed shreds, moss, spiders silk and feathers, all matted together in a compact manner and lined with wool. It contained four young and an addled egg, the latter measuring .014 x .012 mm., white. A description of the nestling plumage I will keep for future publication.

O. & O. XIII, May, 1888, p. 71

Biological Notes from Montana.

Dr. J. C. Merrill, U. S. A.

Regulus calendula (Linn.) Licht.—The Kinglets offer a remarkable illustration of the fact that a bird may be very common, and yet its eggs remain for years among the greatest desiderata of oölogists. So far as I am aware, but four nests of the Ruby-crown have been found up to the present time, and all were found in Colorado.* A fifth nest was found by me on the 18th of June at an elevation of 7,700 feet. It was in a fir tree, about eighteen feet from the ground, and placed directly against the trunk, supported by a single branch beneath and by several twigs to which the sides were firmly attached. It is large for the size of the bird, measuring externally 3×4 , internally $1\frac{3}{8} \times 1\frac{3}{8}$ inches. It is a very neat, well-made structure with soft thick walls. With the exception of the lining, which consists of feathers of the Richardson's Grouse well woven into the sides and bottom, the whole nest is composed of delicate strips of bark, small pieces of green moss, and fibres of weeds, with a few feathers, spiders' webs and fragments of a wasp's nest, the whole forming a somewhat globular mass of soft materials. Of the eggs, which were eight in number, one had apparently just been laid; the others were somewhat advanced in incubation, but in varying degrees, showing that the female had begun to sit soon after laying the first egg. Dissection of the female showed that this was the full complement of eggs. They average .55 \times .43, with scarcely any variation in size, though some are much more pointed at the smaller end than others. It is not easy to give an accurate idea of the color of these eggs by any description. At first sight they appear to be of a uniform dirty cream-color, but a close examination shows that in most of the specimens this color is deeper at the larger end and there forms a faint ring. In six of the eggs there are one or two very fine hair lines at the larger end. Other eggs of this species are spotted, a fact which is strongly indicated by the appearance of the set just described. Thus, Dr. Brewer, in speaking of the egg found by Mr. Batty, says "the ground color is a cream-white, and over this are profusely scattered minute dots of brown with a reddish tinge." Mr. Scott describes the eggs he found as "of a dirty white color, faintly spotted all over with light brown, which becomes quite definite at the larger end." The single egg obtained by Mr. Drew is described as "white." It is thus evident that many more sets must be obtained before the prevailing type of egg of the Ruby-crown can be determined. I may add that this species was breeding in considerable numbers, but owing to want of time I only succeeded in finding the nest above described.

Bull. N. O. C. 8, Oct. 1881, p. 204.

† It may be stated here that the crown of this specimen was plain with the exception of three scarlet feathers.

s of *Regulus calendula*.—About the 20th of May, our cattle ranches on the White Mountains, Apache and a pair of Ruby-crowned Kinglets busily engaged from in front of the door of the ranch. These to a clump of tall spruce-fir trees about sixty yards or some time I could not be certain as to which tree

. Finally I noticed that the Kinglets stayed longer than in any of the others, so I climbed it and at last a clump of fir cones near the top of the tree. I did I knew it could not then contain eggs. Next day I iged to return to the home ranch, thirty-five miles ; preparatory to a trip to New Mexico, as we had to June 1, that being the last day I could spare, I rode (the morning to the tree where the nest was, tied tree, and ascended to the nest. It was blowing was so near the top of the tree that taking it became a difficulty. The nest was completely hidden by the

fir cones surrounding it, and was placed about four feet out from the stem of the tree, at the end of a branch, so I ultimately found it necessary to cut off the branch, nest and all. The nest contained five fresh eggs. Cutting off the extreme end of the branch with the cluster of cones and nest still attached, I descended the tree but unfortunately broke an egg on the way down. Even after I had the nest down upon the ground, it was no easy matter to get the eggs out without breaking them. This, however, I finally succeeded in doing, and packing the eggs in my hat, I started on my long ride home rejoicing.

The nest, as before stated, was placed in a bunch of cones at the end of a small branch, in a spruce-fir tree, at an altitude of about sixty or seventy feet from the ground. It was semi-pensile, being attached to the branch above and also to the cones all round. Fine moss, lichens, cobwebs, etc., were its chief components, the interior plentifully lined with feathers, chiefly those of the Wild Turkey and Dusky Grouse. The external width of the nest was about 4 inches, internal width about 1.5 inches, depth from 1.5 to 2 inches. On my return from New Mexico I was annoyed to find that mice had destroyed the nest, which I had left at the upper ranch.

The eggs were of a whitish ground color, very minutely spotted with pink or pale red chiefly at the larger end where they formed an indistinct band round the greatest width of the egg.

The locality where I found this nest is about twenty-two miles west of the town of Springerville, and at an altitude of about 8500 to 9000 feet above sea-level, just about where the pines (*Pinus ponderosa*) end and the spruces begin. This species is always to be found among the spruces high up in the White Mountains in summer, but I have never been able to find another nest although I have searched long and diligently several seasons.—JOHN SWINBURNE, St. Johns, Apache Co., Arizona.

Avifauna of Arizona, Mearns

Regulus calendula. RUBY-CROWNED KINGLET. — A very abundant summer resident throughout this area, except in the lowest pines where it is rare if occurring at all in summer. I saw it close to the timber line in June. A nest and clutch of fresh eggs were taken in a spruce-tree beneath which my tent had been pitched, at Mehrens' stock ranch in Quaking Asp Settlement, in a notch at the summit of the Mogollon Mountains, on May 26, 1887. It was attached to the end of a horizontal branch upwards of a hundred feet above the ground, where attention was attracted to it by the actions of the parents. Our chief packer, a strong and intrepid climber, secured the nest and eggs, with the parent, having to climb the tree twice and saw off the limb, before the hazardous feat was accomplished. The parents were extremely fearless.

Auk, VII, July, 1890, p. 263.

Stearns and Coates N. E. Bird Life.
Review by Wm Brewster.

Regulus calendula.—The Ruby-crowned Kinglet, given as "one of the many birds which mark the distinction between the Canadian and Alleghanian Fauna, being apparently limited by the former in its southward range during the breeding season," has not actually been ascertained to breed in the Canadian Fauna at all. Boardman alone has catalogued it as a rare "summer visitant," but none of the recent investigators have detected it excepting in the migrations. Its southward range in summer is much more likely to prove limited by the Hudsonian than the Canadian Fauna.

Bull. N. O. C. 5, Oct. 1881, p. 238.

713. *Ruby-crowned Kinglet*. By Fred. T. Jencks. *Ibid.*, p. 45.—Only males found to have crests. O. & O. Vol. VIII

726. *Ruby-crowned Kinglet*. By Wm. Brewster. *Ibid.*, p. 56.—Females, as a rule, lack the scarlet crown-patch. O. & O. Vol. VII

Publications Received.—Beckham, C. W. Remarks on the plumage of *Regulus calendula*. (Proc. U. S. Nat. Mus. VIII, No. 40, Dec. 1885.)

756. *Ruby-Crowned Kinglet*. By D. D. Stone. *Ibid.*, pp. 83, 84.—Its nest, eggs, and breeding habits as observed in Colorado.

Myadestes
Townsendi

First Capture of Townsend's Solitaire (*Myadestes townsendi*) on Long Island, New York.—A male of this species was captured at Kings Park, November 25, 1905, by Mr. J. A. Weber who kindly put the bird into my hands for identification. It appears to have wandered far from its habitat, the Rocky Mountains, although there is the possibility of its being an escaped cage-bird. While the freshness of plumage and normal length of claws do not preclude this possibility, the species is not, I am told, one that is caged for sale, and the specimen in question seems to have as good a claim to be recorded as have other unexpected waifs in other

localities. A specimen of Townsend's Solitaire has been taken as far east as Illinois, December 16, 1875 (Bull. N. O. C., I, 1876, p. 40), the late date suggesting, as does Mr. Weber's bird, some connection between autumn storms and the wafting eastward of purely accidental western visitors like the one now first recorded for New York.—JONATHAN DWIGHT, Jr., M. D., *New York City*.

Ark. XXIII, Jan., 1906, p. 105-106.

P. 215
Ciclos

Parus bicolor.

For Connecticut records see "Birds of Connecticut,
Merriam, 1877." p.9. Shelf 5 in the library.

THE TUFTED TITMOUSE ON STATEN ISLAND, N. Y.—I shot a specimen of this species (*Lophophanes bicolor*) on the 24th of August, 1881, in a thick wood, a few miles south of Port Richmond, a small town on the north shore of Staten Island, N. Y.—DANIEL E. MORAN, *Brooklyn, N. Y.*

Bull. N. O. A. 7, 1882, p. 52.

Dutcher, Rare Long Island Birds.

Parus bicolor. TUFTED TITMOUSE.—This specimen was also procured by Mr. Akhurst in the second growth on the East-side lands within the city limits of Brooklyn; he states that during his active collecting he saw a number of these birds. It is such a noisy species that any individuals in a locality are sure to attract the collector by their outcry.

Auk X, July, 1893 p. 277.

Some Birds of Unusual Occurrence in Orleans Co., N. Y.

Parus bicolor. TUFTED TITMOUSE.—I prize nothing which I have in my collection more highly than I do a fine male of this species, which was taken just south of Holley, March 17, 1889, by Mr. Fred C. Lusk. This bright bird would be a charming addition to our regular avi-fauna, but I know of no other records of its occurrence in this or adjoining counties.

In the foregoing notes, I have only made mention of some of the rarer birds which have been taken in Orleans County, but there yet remain unreported several unusual occurrences for this section which should become matters of record, and which, at some later day perhaps, I may report to your valuable journal. Some of these occurrences are fully as rare as any mentioned above, but as yet lack the authentic and complete corroboration which I hope to attach to them after further investigation.—NEIL F. POSSON, *Medina, N. Y.* Auk, XVI, April, 1899, pp. 193-6.

Notes concerning certain Birds of Long Island. by William C. Beadler, M. D.

Parus bicolor. The Tufted Titmouse is observed so infrequently on Long Island that it is considered proper to place the following note of its occurrence on record. I heard and saw an individual of this species at Sheepshead Bay on March 14 and 15, 1893. A thick grove of cedars, almost impenetrable in many places by reason of thick underbrush and cat-briar, stands, or then stood, on the edge of the salt-meadows at that place. Here, on the date first mentioned I saw Crows, Goldfinches, White-throated and Song Sparrows, Robins, Purple Grackles, one Red-winged Blackbird, Myrtle Warblers and one Golden-winged Woodpecker. My attention was attracted by the clear, whistled note of what I at once recognized as the Tufted Titmouse. I heard intermittently for about a quarter of an hour the series of notes, which sound like *pétel-you, pétel-you, pétel-you*, but did not succeed in getting sight of the singer. Wishing to confirm what I considered a rare find for Long Island, I returned the next day. The bird was still there and singing, and without much trouble, by imitating the song, I coaxed him out of the thicket into plain sight. No doubt existed in my mind as to the identification, as I am familiar with the songs of the bird and its appearance in life. Giraud in his 'Birds of Long Island' (1844), wrote as though *Parus bicolor* were common at that time. It is also included in Lawrence's 'List.' But one specimen, bearing no date, is extant in the Long Island Historical Society's collection (Dutcher, Auk, X, 1893, p. 277). I consider it a very rare straggler on Long Island.

Auk, XIX, April, 1902, p. 148-149

The Tufted Tit — A New Record for Canada.— On May 2, 1914, at the far end of the trees on Point Pelee, Ontario, Mr. J. S. Wallace found two Tufted Tits (*Baeolophus bicolor*) one of which at least was very talkative. He called the writer over and after watching them a short time we secured one.

This bird has been sought at Point Pelee as being the most likely place, ever since the present contingent began to visit the Point regularly, nearly ten years ago. The bird occurs every fall on Belle Isle which lies between Detroit, Michigan, and Windsor, Ontario, and has been vainly sought on the mainland in Windsor as well as lower down on the Detroit River.

In lower Ontario the Black-capped Chickadee is the only regular visitor of the family and therefore it was quite an extraordinary event that on May 2 and 3 we saw not only the Black-cap and the Tufted but the Hudsonian as well. The latter was a single bird talking away to himself at a great rate and very unsuspecting.— W. E. SAUNDERS, *London, Ontario.*

Auk, xxxi, July 1914, p. 402.

Auk, XIV, July, 1897, p. 325.

A novel Idea of a Tufted Titmouse.— On April 10, 1897, while wandering leisurely along the border of a wood outside of Beverly, N. J., my eye caught sight of the peculiar actions of a small bird ahead of me. Walking cautiously to within a reasonable distance and using my field glasses, I observed a Tufted Titmouse (*Parus bicolor*), as I supposed trying to drive a red squirrel away. The squirrel was lying flat on the upper side of a large sloping limb, and the Titmouse would approach cautiously from behind and catch at its tail. It was not long before I noticed that the bird had collected quite a mouthful of the hairs, with which it flew off to a hole near by where it was deposited. This is certainly one of the most interesting novelties in relation to nest building that I ever met with. A friend who was with me also observed the occurrence.— J. HARRIS REED, *Beverly, N. J.*

Nesting of the Tufted Tit in 1888.

BY C. S. BRIMLEY, RALEIGH, N. C.

I found three nests of this species this year, two containing eggs and one young. The two first I thought rather remarkable in situation and so proceed to describe them.

On April 28th, while looking for eggs in a large tract of woods, I happened to look in a hollow in a small dogwood, whereupon something squirmed and tried to hide itself. On

further investigation I discovered not a flying squirrel, as I expected, but a Tufted Tit, which I removed with some trouble and then collected and packed a beautiful set of six eggs. The opening of the hollow was about two feet from the ground, and the hollow reached to the earth, but for half the distance three sides of it were gone. So the birds had piled up moss, leaves, etc., from the ground right up into the hole and then lined the nest at the top with white cat fur and a few pieces of snakeskin, the eggs being at least eighteen inches from the bottom of the nest.

My next nest contained young, and was in a still more peculiar position. A dead birch limb had rested in a live birch in a nearly upright position until it was a mere hollow tube of thin bark. The birds had appropriated this and as in the other one, had piled up dead leaves, moss and dirt in the shell and then lined the top with moss and lint cotton. This was found on May 15th.

The third nest was found on June 8th in an old apple tree and contained five eggs, slightly incubated. The hole was about eleven feet high and the nest about a foot deep inside. It was composed of grass, green moss and some snakeskin. Like the first, the bird had to be pulled off her nest, and she also apparently tried to break her eggs, which was also a characteristic of the first one.

This concludes my experience with the Tufted Tit this year. Next year I hope to make a nearer acquaintance with her and her eggs.

O. & O. XII, Sept. 1888 p. 142

Eggs of the Tufted Tit.

In reading Mr. J. P. N.'s description of a series of eggs of the Tufted Tit (*Lophophanes bicolor*) I came across some sets described from Wake Co., N. C., collected by us. In this connection I wish to call attention to the descriptions of set XXII, collected June 8, 1888, and set XVII collected May 2, 1889. In each case it will be seen that the eggs were very heavily spotted with burnt sienna, so as to almost obscure the ground color at the larger ends, and in each case one egg was much less marked than the others. Now these two sets were each taken from hollows in old apple trees in the same orchard not many yards apart, and I presume were probably laid by the same pair of birds, though in different years. C. S. Brimley.

Raleigh, N. C.

[I have always maintained that the same bird always reproduces any peculiarity in the markings of its eggs in subsequent sets, and I am a firm believer in this theory. I may add that the well-known oölogist "J. M. W." (Mr. C. L. Rawson) fully agrees with me as to this.

J. P. N.
O. & O. XV, Dec. 1890, p. 182.

For a while I was unsuccessful, until on wading out to an old rotten willow standing in a foot and a half of water, I could see

some kind of a nest in an irregular hollow not more than three feet high. On breaking out the hole there appeared a mass of material that looked like the commencement of a nest. On carefully examining it I found that what appeared like the foundation was really the projecting side pulled over a completed nest of Tufted Tit (*Lophophanes bicolor*), and hidden in it were three fresh eggs. I was sorry to find the number so small but had to take them after having got that far. This was the lowest nest I have seen of this bird.

Raleigh, N. C.

(April 30, 1889)

H. H. Brimley

O + O. Mar. 1890. p. 39.

A Series of Eggs of the Tufted Titmouse.

The eggs of the Tufted Titmouse (*Parus bicolor*) vary in number from five to nine, although five or six is the number that is usually found.

The nest is loosely constructed, and is made of leaves, strips of bark, moss, hair, feathers, and sometimes snake skins. It is built in an old hole of a Woodpecker, or in a natural cavity, and is generally at a considerable height from the ground, although sometimes low down. Of the twenty-two sets of eggs now before me one nest was two feet from the ground; another, three feet; a third, five feet; three others, seven, eight, and eleven feet respectively; three were at fifteen feet; another, twenty; another, twenty-five; still another, twenty-eight feet; two were forty feet; another forty-eight feet; while two were fifty feet; and two others sixty feet from the ground.

The eggs vary in shape from ovate to elongate ovate. The ground color varies from white to creamy.

Set I. May 5, 1888. Buncombe County, N. C. Six eggs, fresh. Light creamy white, speckled all over the surface with hazel: .80 x .58; .77 x .55; .79 x .56; .81 x .57; .79 x .54; .80 x .55.

Set II. May 15, 1888. Buncombe County, N. C. Seven eggs, incubation begun. White, speckled all over the surface with hazel: .74 x .55; .74 x .55; .72 x .55; .69 x .53; .73 x .53; .71 x .54; .68 x .50.

Set III. April 13, 1889. Leighton, Alabama. Six eggs, incubation begun. White, speckled with hazel. One of the eggs has bolder markings than the others, and in all of them the specks are closer together near the ends: .74 x .56; .73 x .55; .75 x .55; .73 x .55; .72 x .56; .72 x .56.

Set IV. May 5, 1889. Buncombe County, N. C. Four eggs, fresh. White, speckled and spotted all over the surface with vinaceous-rufous: .73 x .54; .73 x .55; .75 x .55; .76 x .55.

Set V. April 20, 1886. Lee County, Texas. Four eggs, incubation commenced. Light creamy, speckled, more heavily at the larger ends, with hazel: .72 x .52; .72 x .55; .77 x .50; .78 x .54.

Set VI. May 8, 1887. Edgecombe County, N. C. Five eggs, fresh. Light creamy white, speckled and spotted with hazel. The markings are scattered all over the surface, but are heaviest near the larger ends on all the eggs except one, where they are thicker near the smaller end: .80 x .55; .75 x .55; .79 x .55; .73 x .53; .74 x .54.

Set VII. April 28, 1888. Wake County, N. C. Six eggs, fresh. White, speckled, more heavily at the larger ends, with hazel: .70 x .56; .71 x .57; .72 x .54; .69 x .56; .69 x .56; .70 x .55.

Set VIII. May 2, 1888. Buncombe County, N. C. Seven eggs, incubation begun. White, speckled and spotted, more heavily at the larger ends, with vinaceous-rufous. There are also a few spots of lilac-gray: .74 x .56; .75 x .56; .75 x .55; .74 x .55; .72 x .55; .74 x .56; .70 x .56.

Set IX. April 26, 1887. Iredell County, N. C. Six eggs, fresh. Light creamy white, speckled all over the surface with vinaceous-rufous. Near the larger ends the markings are heavier: .74 x .58; .74 x .57; .75 x .57; .73 x .58; .73 x .58; .72 x .55.

Set X. May 3, 1889. Buncombe County,

N. C. Six eggs, incubation advanced. White, speckled and spotted all over the surface (but more heavily near the larger ends) with chestnut: .73 x .55; .74 x .55; .74 x .55; .74 x .55; .74 x .55; .75 x .55.

Set XI. April 27, 1888. Buncombe County, N. C. Six eggs, incubation begun. Light creamy white, speckled with hazel: .71 x .53; .73 x .54; .72 x .54; .74 x .54; .73 x .52; .73 x .51.

Set XII. April 24, 1888. Buncombe County, N. C. Seven eggs, incubation begun. White, speckled and spotted, more heavily at the larger ends, with vinaceous-rufous, and a few specks of lilac-gray: .75 x .55; .74 x .56; .74 x .56; .71 x .58; .73 x .56; .73 x .54; .73 x .56.

Set XIII. May 4, 1889. Buncombe County, N. C. Six eggs, incubation advanced. White, speckled and spotted with chestnut. On two of the eggs the markings are principally confined to the smaller ends, but on the others they are at the larger ends; and on one egg the markings form a wreath. This last is a rare type of marking for this species, being the only one so marked in the whole series: .75 x .55; .74 x .55; .70 x .55; .69 x .52; .70 x .53; .72 x .56.

Set XIV. May 2, 1889. Wake County, N. C. Seven eggs, fresh. White, speckled and spotted all over the surface with hazel and a few specks of lilac-gray: .70 x .54; .69 x .55; .69 x .54; .71 x .54; .71 x .54; .70 x .55; .72 x .55.

Set XV. May 1, 1888. Edgecombe County, N. C. Five eggs, incubation advanced. Light creamy white, speckled and spotted with hazel. The markings are much heavier near the larger ends: .74 x .55; .74 x .55; .77 x .56; .73 x .55; .75 x .54.

Set XVI. April 25, 1889. Buncombe County, N. C. Seven eggs, fresh. White, spotted, principally at the larger ends with vinaceous-rufous, and a few spots of lilac: .70 x .55; .68 x .54; .68 x .55; .67 x .54; .65 x .55; .65 x .55; .70 x .56.

Set XVII. May 2, 1889. Wake County, N. C. Six eggs, incubation begun. White, very heavily spotted, almost entirely at the larger ends, with burnt sienna. Five of the eggs are thus marked, and so heavily in some instances that the ground color is obscured at the larger ends; but the sixth egg is almost entirely unmarked, except a few small specks of cinnamon-rufous and lilac-gray: .70 x .55; .69 x .52; .71 x .53; .70 x .53; .69 x .52; .68 x .51.

Set XVIII. May 2, 1888. Buncombe County, N. C. Six eggs, fresh. Light creamy white, speckled and spotted all over the surface, but more heavily at the larger ends, with hazel. There are also a few specks of lilac-gray on some of the eggs: .74 x .56; .74 x .58; .71 x .56; .74 x .56; .72 x .55; .71 x .55.

Set XIX. June 7, 1889. Buncombe County, N. C. Five eggs, incubation begun. White, speckled and spotted with hazel. In the case of three of the eggs the markings are evenly distributed all over the surface, while on the other two they are heavier near the larger ends: .75 x .53; .75 x .52; .74 x .53; .75 x .54; .76 x .55; .72 x .54.

Set XX. May 6, 1887. Edgecombe County, N. C. Five eggs, fresh. White, heavily speckled and spotted with burnt sienna and drab-gray. There are markings all over the surface, but they are much thicker and heavier near the larger ends: .72 x .55; .69 x .56; .65 x .55; .73 x .54; .69 x .54.

Set XXI. June 8, 1888. Wake County, N. C. Five eggs, incubation begun. White, heavily spotted with burnt sienna. Have also a few spots of drab-gray. On four of the eggs the markings are so heavy at the larger ends that they almost obscure the ground color, while the fifth egg has fewer spots: .70 x .52; .68 x .53; .68 x .51; .68 x .51; .66 x .52; .68 x .54.

Set XXII. June 2, 1887. Buncombe County, N. C. Five eggs, fresh. White, spotted, principally at the larger ends, with burnt sienna, and a few spots of drab-gray: .77 x .55; .76 x .54; .74 x .53; .74 x .53; .73 x .53.

J. P. N.



The Audubon Monument.

The New York Academy of Sciences, acting in cooperation with other scientific associations of New York and the American Ornithologists' Union, proposes to erect a monument to John James Audubon, whose remains rest in

Trinity Church Cemetery, New York City. A design substantially as represented in the accompanying engraving, has been selected. The ornamentation, however, will all be changed to represent animals and plants, with which Audubon was familiar, selected for the most part from the plates in his magnificent books. The estimated cost of this monument is about \$10,000, which the committees of the co-operating societies wish to raise by a general subscription, hoping, indeed, that all American naturalists of whatever branch of study, shall be represented. Thus, a large number of small subscriptions is more desired than a limited number of large contributions, and rather than planning to raise the whole sum necessary in New York City, it is wished that the enterprise take a more national character. Subscriptions from 25 cents to \$100.00 have been received. Contributions should be sent to Dr. N. K. Britton, Treasurer, Columbia College, New York City, by whom they will be promptly acknowledged, and the names of the donors will be permanently recorded in the published Transactions of the Academy of Sciences.

Nesting of the Tufted Titmouse.

BY R. B. MCLAUGHLIN, STATESVILLE, N. C.

Though the Tufted Titmouse (*Lophophanes bicolor*), is quiet in late autumn and early winter, I have heard him singing as blithely in the month of December as though the time of his honeymoon were at hand.

Apparently much amity subsists between the Tufted Tit and his sociable little kinsman, our Tomtit (*Parus carolinensis*). In fall and winter these two species may often be seen feeding together, and from the perfect harmony and lisp-ing chatter, one would infer that either has an insight into the nature and lingo of his fellow.

The Tufted Titmouse may be called an abundant resident with us, and, at nesting time, one can stroll out in the early morning and hear perhaps a score or more of them singing within their respective beats. Perhaps there is no other bird which breeds so abundantly in the South Atlantic States, whose eggs are such *desiderata*, and this is owing to the fact that its nest is somewhat difficult to find, and several reasons may be assigned why such is the case.

The bird builds in a natural cavity of a tree, hence the newly cut hole, with chips scattered on the ground beneath, which point like treacherous sign-boards to the home of the woodpecker, are here absent; and, in short, there is not

a single outward sign from which the collector can obtain a clue. A mere hole in a tree is no "sign of a duck's nest," and it is no sign of a Tit's nest. The tenacity, too, with which the bird clings to its nest when the intruder raps at its door, is not a little aggravating, and apt to deceive the inexperienced. I can recall but two instances of its coming from the nest when I tapped on the tree, and as one of these came from a hole forty feet above, I am wholly at a loss to know what to attribute it to.

About the twelfth of April, the birds may be seen reconnoitering the hollow trees within their accustomed feeding-ground, with a view to nesting. It is then that the old leaning sourwood stub, with a hole in the top, possesses so much magnetism; and when the top part extends beyond the entrance so as to shelter it from the weather, it is thereby rendered especially seductive. When the site is determined on, the female flies down close by the brook, and, as a first step, gathers some dead leaves, in the selection of which she is a trifle fastidious. She does not want one too wet and heavy, but wants it to have sufficient moisture to allow it to pack well, and bear pressure without crumbling.

When she is ready to leave for the nest, it is safe to assume that she has the largest load, considering her size, that the ornithologist ever sees carried by a bird. Being so heavily loaded, she does not rise and fly straightway to the nest, but hops upon the lower limbs of a bush and works her way to the top, then begins her firesome flight. She stops here and there to rest on the way, and therefore is easily followed by the long-legged collector, but, like *igavis fatuus*, she may lead him through bogs, ditches, thickets, and what not. Then, about moist places in the same vicinity, she gets a supply of green moss and mixes in a modicum of dirt. After she has accumulated the desired amount of such materials, we will find her at the bed of the flying squirrel (*Pteromys volucella*), or some other mammal which collects the thin inner bark of trees, and she does not hesitate to appropriate as much as she needs. Then she is off for the farmer's barn, and any bunch of cornsilks about his granary is used. Again she is over where he carried his horse or butchered his pig, in quest of hair. This is the first step, and the nest then awaits oviposition. It is not improbable that some soft substances are added while the eggs are still being deposited, but, be that as it may, from the laying of the first egg the sides of the nest are carefully drawn in and the contents hidden.

When the nest is in a cavity which cannot be looked into, as is frequently the case, it is purely a matter of speculation to say when the complement has been laid, since the bird ignores the sound of our gavel.

When a bird digs its own hole, there is apt to be a thin place in the wood which may be located with a knife-blade, so when I am eager to learn the contents I make an incision barely large enough to admit the light and peep in. If the nest or set has not been completed, I carefully pin a strip of bark or a bit of soft wood over the place thus made, and usually the work goes serenely on. But as the Tufted Tit not only builds in a natural hollow, but has the precaution to cover its eggs, this little scheme often fails to work so satisfactorily. However, sad experience has caused me lately to cut the Gordian knot by having recourse to the hatchet, for surely there is as much satisfaction in cutting in too soon as there is in allowing the bird to hatch while waiting for her to lay.

The bird's boldness about her nest is remarkable, yet it is a don't care-a-cent kind of bravery rather than pugnacity. She is perfectly cool and demure as you look down at her seated upon the nest, and does not seem to care if you do put your hands on her, but, as Hood has it,

"Take her up tenderly
Lift her with care,"

for she will sometimes sink her claws into the side of the nest, and as she is being lifted will empty the eggs against the tree.

I once found a nest to which a friend climbed, cut in, took the bird off, and threw her off; and although the nest was only eight feet high, before he could climb up again the bird was on and had to be caught and thrown out again. I took a Tit from a nest of seven eggs in an old apple stump once, but as the shells indicated an advanced stage of incubation, I removed one egg only and ran a pin into it to learn if the embryo had hardened. While I was thus engaged, the bird hopped on her nest and was removed only by force.

I remember a pair which reared their brood in a hollow stump that had been drawn from the ground and leaned against a tree. I have shown this old stump some attention since, but have taken no eggs from it.

Unlike some birds which nest in holes, the Tufted Titmouse will not occupy the same one habitually, at least, a case of its doing so has never come to my notice. I have seen from five to eight eggs in a nest, but seven is unquestionably the usual number laid in this locality.

One morning, while sitting in my room writ-

ing, I heard a peculiar noise quite near, and on looking around was astonished to see a Tufted Tit in the middle of the room holding a ball of crumpled writing paper. Observing my movement he dropped it, but took it up again and carried it out of the window.

O. & O. XIII, Apr. 1888 p. 61-63

altricapillus

Parus atricapillus

1889

April 17^{ca} - 26^{ca} - 30^{ca} 1889 5-4 pairs C. F. Ch. ed. 6-7 pairs 8^{ca} - 9^{ca} 10^{ca} - 11^{ca} 13^{ca} - 14^{ca} - 16^{ca} - 22^{ca} - 25^{ca} - 26^{ca} - 27^{ca} 1891
 May 14^{ca} - 17^{ca} 1889 12^{ca} - 7^{ca} - 15^{ca} - 16^{ca} - 17^{ca} - 29^{ca} - 30^{ca} - 31^{ca} 1890
 June 3^{ca} - 10^{ca} - 12^{ca} - 14^{ca} - 24^{ca} - 28^{ca} 1890
 July 17^{ca} 1889 6^{ca} - 16^{ca} 1890
 Aug 23^{ca} 1889 19^{ca} - 26^{ca} 1890
 Nov. 9^{ca} - 25^{ca} - 26^{ca} - 27^{ca} - 30^{ca} 1889 1^{ca} - 3^{ca} - 14^{ca} - 25^{ca} 1890 4^{ca} - 5^{ca} - 6^{ca} - 7^{ca} - 8^{ca} - 11^{ca} - 12^{ca} - 13^{ca} - 23^{ca} - 24^{ca} - 28^{ca} - 29^{ca} - 30^{ca} 1891
 Dec. 1^{ca} - 4^{ca} - 5^{ca} - 6^{ca} - 18^{ca} - 13^{ca} - 23^{ca} - 18^{ca} - 12^{ca} - 10^{ca} - 2^{ca} - 3^{ca} - 6^{ca} - 7^{ca} - 8^{ca} - 10^{ca} - 16^{ca} - 27^{ca} - 28^{ca} Concord 1891
 Jan'y 3^{ca} - 27^{ca} - 28^{ca} - 26^{ca} 1890 28^{ca} - 31^{ca} - 8^{ca} - 22^{ca} - 24^{ca} - 25^{ca} - 29^{ca} - 30^{ca} 8^{ca} - 19^{ca} - 20^{ca} - 21^{ca} - 22^{ca} - 23^{ca} - 24^{ca} - 25^{ca} - 26^{ca} - 27^{ca} - 28^{ca} - 29^{ca} - 30^{ca} 1892
 9^{ca} - 10^{ca} - 12^{ca} - 13^{ca} - 15^{ca} - 16^{ca} - 22^{ca} - 25^{ca} - 31^{ca} 1893

1889
 May 14 each (Kemper)

Feb. 2^{ca} - 5^{ca} - 17^{ca} - 18^{ca} - 21^{ca} - 27^{ca} 1891 7^{ca} - 8^{ca} - 9^{ca} - 20^{ca} - 26^{ca} - 28^{ca} 1893
 " 1^{ca} - 2^{ca} - 3^{ca} - 4^{ca} - 5^{ca} - 6^{ca} - 8^{ca} - 9^{ca} - 10^{ca} - 15^{ca} - 16^{ca} - 20^{ca} - 21^{ca} - 22^{ca} - 27^{ca} - 29^{ca} } Concord 1892

P. atricapillus

March 12^{ca} - 3^{ca} - 6^{ca} - 16^{ca} - 17^{ca} - 18^{ca} - 22^{ca} - 24^{ca} - 25^{ca} - 27^{ca} - 28^{ca} - 29^{ca} - 31^{ca} 1891
 " 4^{ca} - 5^{ca} - 6^{ca} - 7^{ca} - 8^{ca} - 9^{ca} - 10^{ca} - 13^{ca} - 15^{ca} - 18^{ca} - 21^{ca} - 22^{ca} - 24^{ca} - 26^{ca} - 27^{ca} - 30^{ca} } Concord 1892
 " 1^{ca} - 5^{ca} - 8^{ca} - 9^{ca} - 15^{ca} - 16^{ca} - 17^{ca} - 21^{ca} - 22^{ca} - 24^{ca} - 25^{ca} - 27^{ca} - 30^{ca} 1893

April 1^{ca} - 3^{ca} - 4^{ca} - 5^{ca} - 7^{ca} - 13^{ca} - 15^{ca} - 19^{ca} - 21^{ca} - 23^{ca} - 24^{ca} - 25^{ca} - 26^{ca} - 28^{ca} - 29^{ca} - 30^{ca} Concord 1892

May 9^{ca} - 11^{ca} - 10^{ca} - 11^{ca} - 12^{ca} - 23^{ca} - 31^{ca} 1891
 " 1^{ca} - 3^{ca} - 4^{ca} - 7^{ca} - 8^{ca} - 9^{ca} - 11^{ca} - 12^{ca} - 13^{ca} - 14^{ca} - 19^{ca} - 20^{ca} - 23^{ca} - 25^{ca} - 28^{ca} - 29^{ca} - 30^{ca} - 31^{ca} Concord 1892

June 1^{ca} - 3^{ca} 1891 1^{ca} - 6^{ca} - 17^{ca} - 19^{ca} - 23^{ca} Concord 1892

July 1^{ca} - 14^{ca} - 16^{ca} - 18^{ca} - 26^{ca} Concord 1892

Aug. 2^{ca} - 13^{ca} - 14^{ca} - 15^{ca} - 18^{ca} - 20^{ca} - 21^{ca} - 28^{ca} - 30^{ca} Concord 1892

Sept 7^{ca} - 8^{ca} - 11^{ca} 1890 1^{ca} - 3^{ca} - 4^{ca} - 5^{ca} - 7^{ca} - 8^{ca} - 9^{ca} - 16^{ca} - 18^{ca} - 20^{ca} - 21^{ca} - 24^{ca} - 25^{ca} - 28^{ca} - 30^{ca} Concord 1892

Nov. 1^{ca} - 3^{ca} - 5^{ca} - 6^{ca} - 7^{ca} - 9^{ca} - 13^{ca} - 14^{ca} - 16^{ca} - 19^{ca} - 20^{ca} - 21^{ca} Concord 1892

Oct. 2^{ca} - 4^{ca} - 7^{ca} - 18^{ca} - 19^{ca} - 20^{ca} - 21^{ca} - 24^{ca} - 25^{ca} - 26^{ca} - 28^{ca} - 29^{ca} - 30^{ca} - 31^{ca} 1891

" 1^{ca} - 4^{ca} - 6^{ca} - 7^{ca} - 8^{ca} - 9^{ca} - 10^{ca} - 12^{ca} - 14^{ca} - 15^{ca} - 17^{ca} - 18^{ca} - 19^{ca} - 21^{ca} - 22^{ca} - 23^{ca} - 24^{ca} - 25^{ca} - 27^{ca} - 28^{ca} - 30^{ca} - 31^{ca} Concord 1892

Parus atricapillus.

1893.

January $\overset{c.}{9^{th}}$ $\overset{c.}{10^{th}}$ $\overset{c.}{12^{th}}$ $\overset{c.}{13^{th}}$ $\overset{c.}{15-16}$ $\overset{c.}{22^{th}}$ $\overset{c.}{25^{th}}$ $\overset{c.}{31^{th}}$
 February $\overset{c.}{10^{th}}$ $\overset{c.}{6^{th}}$ $\overset{c.}{8^{th}}$ $\overset{c.}{7^{th}}$ $\overset{c.}{26^{th}}$ $\overset{c.}{26^{th}}$ $\overset{c.}{28^{th}}$
 March $\overset{c.}{12^{th}}$ $\overset{c.}{3^{th}}$ $\overset{c.}{31^{th}}$
 April 1^{st} 2^{nd} 3^{rd} 4^{th} 8^{th} 9^{th} 10^{th} 11^{th} 21^{st} 22^{nd} 23^{rd} 25^{th} 27^{th} 28^{th} 30^{th} Concord
 May 1^{st} 9^{th} 10^{th} 11^{th} 12^{th} 15^{th} $[18^{th}]$ 21^{st} 23^{rd} 25^{th} 29^{th} 30^{th} Concord.
 June
 July 1^{st} 5^{th} 6^{th} 8^{th} 14^{th} 18^{th} 19^{th} 20^{th} 21^{st} 29^{th} 30^{th} Concord.
 August 2^{nd} 4^{th} 5^{th} 8^{th} (10 am) 9^{th} 11^{th} 12^{th} 13^{th} 16^{th} 20^{th} 21^{st} 25^{th} 26^{th} 27^{th} 28^{th} 30^{th} 31^{st} Concord.
 September 2^{nd} 3^{rd} 4^{th} 6^{th} 8^{th} 9^{th} 12^{th} 13^{th} 16^{th} Concord
 October 25^{th} 26^{th} 27^{th} 29^{th} 30^{th} 31^{st} Concord
 November 1^{st} 3^{rd} 4^{th} (working out) 5^{th} Concord 7^{th} 11^{th} 12^{th} 13^{th} 19^{th} 21^{st} 26^{th} 27^{th}
 December 7^{th} 9^{th} 17^{th} 18^{th} 19^{th} 22^{nd} 23^{rd} 24^{th} 25^{th} 29^{th} 30^{th}

P. atricapillus.

1894.

January 8^{th} 9^{th} 13^{th} 17^{th} 18^{th} 20^{th} 24^{th} 28^{th} Cambridge garden - S. W. Newton
 February
 March
 April
 May 3^{rd} 4^{th} 6^{th} 14^{th} 20^{th} 26^{th} 27^{th} Concord
 June 3^{rd} 4^{th} 9^{th} 10^{th} 11^{th} Concord
 July 8^{th} 25^{th} Concord
 August 5^{th} 7^{th} 11^{th} 12^{th} 18^{th} Concord
 September
 October 6^{th} 7^{th} 12^{th} 14^{th} 15^{th} 16^{th} 17^{th} 18^{th} 20^{th} 25^{th} 27^{th} 28^{th} 29^{th} 30^{th} Concord
 November 1^{st} 2^{nd} 3^{rd} 4^{th} 12^{th} 13^{th} 14^{th} 15^{th} 16^{th} 17^{th} 18^{th} 20^{th} 21^{st} Concord 25^{th} 30^{th}
 December 10^{th} 3^{rd} 7^{th} 8^{th} 17^{th} 19^{th} 24^{th}

* = Phoebe call. (noted only when given Spontaneous.)

Parus atricapillus.

1895.

January	cd. 20 [Ⓢ] - 21 ^{hd}
February	Wm. 4 ^{hd} 19 ^{hd} 23 [Ⓢ] 24 [Ⓢ] 28 [Ⓢ]
March	Q. 2 [Ⓢ] 3 ^{hd} 10 ^{hd} 12 ^{hd} 13 [Ⓢ] 15 [Ⓢ] 17 ^{hd} 20 ^{hd} 22 [Ⓢ] 24 [Ⓢ] 25 [Ⓢ] 27 [Ⓢ] 29 ^{hd} 29 ^{hd} 30 [Ⓢ] 31 ^{hd}
April	4 [Ⓢ] 6 [Ⓢ] 7 [Ⓢ] 8 [Ⓢ] 11 [Ⓢ] 13 ^{hd} 19 ^{hd} 23 ^{hd} 25 ^{hd} 27 ^{hd} 28 ^{hd}
May	4 ^{hd} 6 ^{hd} 11 ^{hd} 12 ^{hd} 17 ^{hd} 18 [Ⓢ] 23 ^{hd} 25 ^{hd} 27 ^{hd} 28 ^{hd}
June	16 ^{hd}
July	
August	9 ^{hd} 22 ^{hd} 1 ^{hd} 25 ^{hd} 27 ^{hd}
September	
October	11 ^{hd} 12 ^{hd} 16 ^{hd} 7 ^{hd} 8 ^{hd} 9 ^{hd} 16 ^{hd} 17 ^{hd} 18 ^{hd} 21 ^{hd} 22 ^{hd} 23 ^{hd} 26 ^{hd} 30 ^{hd} Concord.
November	4 ^{hd} 5 ^{hd} 20 ^{hd} 22 ^{hd} 25 ^{hd} 27 ^{hd}
December	3 ^{hd} 7 ^{hd} 7 ^{hd} 8 ^{hd} 10 ^{hd} 11 ^{hd} 15 ^{hd} 17 ^{hd} 18 ^{hd} 22 ^{hd} 29 ^{hd} 31 ^{hd}

P. atricapillus.

1896

January	3 [Ⓢ] 4 [Ⓢ] 7 [Ⓢ] 8 [Ⓢ] 12 ^{hd} 15 ^{hd} 16 ^{hd} 22 ^{hd} 26 ^{hd} 27 ^{hd}
February	2 [Ⓢ] 13 [Ⓢ] 14 [Ⓢ] 23 [Ⓢ] 24 ^{hd} 27 ^{hd}
March	15 ^{hd} 22 ^{hd} 25 ^{hd} 30 ^{hd}
April	2 ^{hd} 3 ^{hd} 4 ^{hd} 6 ^{hd} 7 ^{hd} 8 ^{hd} 10 ^{hd} 12 ^{hd} 13 ^{hd} 14 ^{hd} 15 ^{hd} 16 ^{hd} 17 ^{hd} 18 ^{hd} 19 ^{hd} 20 ^{hd} 22 ^{hd} 25 ^{hd} 28 ^{hd} 29 ^{hd}
May	2 ^{hd} 3 ^{hd} 5 ^{hd}
June	
July	36 ^{hd}
August	
September	
October	7 ^{hd} 11 ^{hd} 12 ^{hd} 14 ^{hd} 20 ^{hd} 21 ^{hd} 22 ^{hd} 23 ^{hd} 24 ^{hd} 25 ^{hd} 26 ^{hd} 27 ^{hd} 28 ^{hd} 29 ^{hd} 30 ^{hd} 31 ^{hd}
November	1 ^{hd} 2 ^{hd} 3 ^{hd} 9 ^{hd} 10 ^{hd} 12 ^{hd} 15 ^{hd} 16 ^{hd} 18 ^{hd} 19 ^{hd} 20 ^{hd} 21 ^{hd} 22 ^{hd} 23 ^{hd} 24 ^{hd} 25 ^{hd} 27 ^{hd} 28 ^{hd} 29 ^{hd} 30 ^{hd}
	4 ^{hd} 11 ^{hd} 13 ^{hd} 14 ^{hd} 20 ^{hd} 21 ^{hd} 22 ^{hd} 25 ^{hd} 26 ^{hd} 27 ^{hd} 28 ^{hd} 29 ^{hd} 30 ^{hd} 31 ^{hd}

Parus atricapillus. 15. H. - Bull. Fin

1897

January 6[⊙] 8[⊙] 10[⊙] 17[⊙] 19[⊙] 21 22² 23² 24[⊙] 26¹ Our garden, Cambridge. Ed. Bull. Fin Co. 27[⊙] 31[⊙] 1897

February 22[⊙] 24[⊙] Our garden, Cambridge. 1897.

March 7¹ 2¹ 7¹ 13[⊙] 15[⊙] 16[⊙] 17[⊙] 18[⊙] 22⁹ 23[⊙] 24. 25. 26[⊙] 27[⊙] 28[⊙] 31¹ / 1897

April 1² 2[⊙] 3[⊙] 4² 5³ 6¹ 7[⊙] 8[⊙] 9[⊙] 10[⊙] 11[⊙] 12[⊙] 13[⊙] 14[⊙] 15[⊙] 16[⊙] 17[⊙] 18[⊙] 19[⊙] 20[⊙] 21[⊙] 22[⊙] 23[⊙] 24[⊙] 25[⊙] 26[⊙] 27[⊙] 28[⊙] 29[⊙] 30[⊙] Concord. 1897

May 1[⊙]

August 17[⊙] 27[⊙] 1897

October 17[⊙] 18[⊙] 19[⊙] 20[⊙] 22[⊙] 23[⊙] 24[⊙] 25[⊙] 27[⊙] 29[⊙] 30[⊙] Concord 1897

November 2[⊙] 3[⊙] 4[⊙] 5[⊙] 7[⊙] 8[⊙] 10[⊙] 11. 12. 17. 18[⊙] 19[⊙] 20[⊙] 21[⊙] 22[⊙] 23[⊙] Concord 1897

December 9[⊙] 10[⊙] 11[⊙] 12[⊙] 1897

Patricapillus

1898

January 8[⊙] 13[⊙] 19[⊙] 1898

February 6[⊙] 8[⊙] 12[⊙] 1898

March 2[⊙] 16[⊙] 17[⊙] 18[⊙] 19[⊙] 20[⊙] 21[⊙] 22[⊙] 23[⊙] 24[⊙] 25[⊙] 28[⊙] 29. 30[⊙] 31[⊙] Concord 1898

April 2[⊙] 3[⊙] 4[⊙] 5[⊙] 6[⊙] 7[⊙] 8[⊙] 9[⊙] 10[⊙] 11[⊙] 13[⊙] 14[⊙] 15[⊙] 16[⊙] 17[⊙] 23[⊙] 24[⊙] 25[⊙] 26[⊙] 27[⊙] 28[⊙] 30[⊙] Concord 1898

May 1² 3² 4² 5² 7² 11[⊙] 13[⊙] 14[⊙] 18² 20² 22² 27[⊙] 28[⊙] 30[⊙] Concord. 1898

June 5² 7[⊙] 11[⊙] 2[⊙] 2[⊙] 23[⊙] 24[⊙] Concord 1898

October 3[⊙] 13[⊙] 18[⊙] 28[⊙] 30[⊙] 2[⊙] 3[⊙] 4[⊙] 6[⊙] 7[⊙] 11[⊙] 18[⊙] 19[⊙] 20[⊙] 21[⊙] 23[⊙] 24[⊙] 25[⊙] 28[⊙] 29 31 Concord 1898

November 3[⊙] 10[⊙] 2[⊙] 3[⊙] 5[⊙] 9[⊙] 11[⊙] 12[⊙] 17[⊙] 21[⊙] 22[⊙] 26[⊙] 27[⊙] 28[⊙] Concord 1898

December 12[⊙] 13[⊙] 27[⊙] 29[⊙] 30[⊙] 1898

1899

January 3¹ 4¹ 5¹ 6¹ 7[⊙] 8[⊙] 10[⊙] 11[⊙] 12[⊙] 13[⊙] 15[⊙] 16[⊙] 17[⊙] 18[⊙] 21[⊙] 22[⊙] 25[⊙] 26[⊙] 28[⊙] 29[⊙] 30[⊙] Our place / Cambridge 1899

February 1[⊙] 2[⊙] 3[⊙] 4[⊙] 5[⊙] 6[⊙] 7[⊙] 8[⊙] 9[⊙] 10[⊙] 12[⊙] 13[⊙] 14[⊙] 15[⊙] 16[⊙] 17[⊙] 18[⊙] 19[⊙] 20[⊙] 21[⊙] 22[⊙] 23[⊙] 24[⊙] 25[⊙] 27[⊙] 28[⊙] 1899

March 1[⊙] 2[⊙] 3[⊙] 4[⊙] 5[⊙] 6[⊙] 7[⊙] 8[⊙] 9[⊙] 11[⊙] 13[⊙] 14[⊙] 15[⊙] 16[⊙] 17[⊙] 18[⊙] 20[⊙] 21[⊙] 22[⊙] 23[⊙] 24[⊙] 25[⊙] 26[⊙] 27[⊙] 28[⊙] 29[⊙] 30[⊙] 31[⊙] Our place, Concord 1899

April 1[⊙] 2[⊙] 5[⊙] 7[⊙] 10[⊙] 11[⊙] 12[⊙] 13[⊙] 14[⊙] 15[⊙] 16[⊙] 17[⊙] 18[⊙] 19[⊙] 20[⊙] 21[⊙] 22[⊙] 23[⊙] 24[⊙] 25[⊙] 26[⊙] 27[⊙] 28[⊙] 29[⊙] 30[⊙] 31[⊙] Concord 1899

May 1[⊙] 2[⊙] 3[⊙] 4[⊙] 5[⊙] 6[⊙] 8[⊙] 10[⊙] 11[⊙] 13[⊙] 14[⊙] 15[⊙] 16[⊙] 17[⊙] 18[⊙] 19[⊙] 20[⊙] 21[⊙] 22[⊙] 23[⊙] 24[⊙] 25[⊙] 26[⊙] 27[⊙] 28[⊙] 29[⊙] 30[⊙] 31[⊙] Concord 1899

June 3[⊙] 1899

October 12[⊙] 13[⊙] 16[⊙] 17[⊙] 20[⊙] 21[⊙] 22[⊙] 23[⊙] 24[⊙] 25[⊙] 26[⊙] 27[⊙] 28[⊙] 29[⊙] 30[⊙] 31[⊙] Our garden, Cambridge 1899

July 2[⊙] 1899

November 1[⊙] 3[⊙] 4[⊙] 5[⊙] 6[⊙] 7[⊙] 8[⊙] 9[⊙] 11[⊙] 21[⊙] 23[⊙] 24[⊙] 25[⊙] 26[⊙] 27[⊙] 28[⊙] 29[⊙] 30[⊙] 31[⊙] Concord 1899

December 7[⊙] 9[⊙] 11[⊙] 13[⊙] 14[⊙] 17[⊙] 19[⊙] 21[⊙] 24[⊙] 27[⊙] 29[⊙] 30[⊙] 31[⊙] Our garden, Cambridge 1899

Parus atricapillus

K = Mrs. C. W. Kestell - B. = R. A. Gilbert

1900 January 11¹ 18² 19¹ 25² 27¹ 29¹ February 1¹ 6¹ 10¹ March 21¹ 28¹ 29¹ 30¹ 31¹ April 4¹ 5¹ 6¹ 8¹ 9²
 " 10¹ 11¹ 12¹ 13¹ 18¹ May 2¹ 18¹ June 1¹ 24¹ 26¹ 27¹ July 12¹ Aug. 13¹ Sept. 11¹ 15¹ 17¹
 " 18² 19² 20² Oct. 23¹ 24¹ 25¹ 26¹ Nov. 1¹ 2¹ 3¹ 7¹ 8¹ 9² 10¹ 17¹ 22¹ 24² 30¹ December 1²
 " 11¹ 12¹ 13¹ 17¹ 21¹ 23¹ 26¹ 28¹ 29¹ 31¹ (in nest)

1901 January 1¹ ^{1st nest at intervals till May} 2¹ ^{1st nest till May} 3¹ 4¹ 5² 7¹ 8² 9² 10¹ 11¹ 12¹ 13¹ 14¹ 15¹ 16¹ 17¹ 18¹ 19¹ 20¹ 21¹ 22¹ 23¹ 24¹ 25¹ 26¹ 27¹ 28¹ 29¹ 30¹ 31¹ February 1¹ 2¹ 4¹ 6² 8¹ 13¹ 14¹ 15¹ 16¹ 18¹ 19¹ 20¹ 21¹ 22¹ 23¹ 25¹ 26¹ 27¹ 28¹ March 1¹ 2¹ 4¹ 5¹ 6¹ 8¹ 10¹ 12¹ 19¹ 14¹ 15¹ 16¹ 18¹ 19¹ 20¹ 21¹ 22¹ 23¹ 24¹ 25¹ 26¹ 27¹ 28¹ 29¹ 30¹ April 1¹ 2¹ 3¹ 6¹ 8¹ 9¹ 10¹ 11¹ 12¹ 13¹ 14¹ 17¹ 18¹ 20¹ 22¹ 24¹ 26¹ May 1¹ 2¹ 3¹ 4¹ 15¹ 18¹ 20¹ 24¹ 28¹ June 5¹ August 14¹ July 2¹ 11¹ 12¹ August 1¹ 5¹ 7¹ 8² 9¹ 14¹ 16¹ 17¹ 19¹ 21¹ 22¹ 24¹ 26¹ 27¹ 28¹ 30¹ September 2¹ 4¹ 6¹ 14¹ 17¹ 18¹ 21¹ 24¹ 27¹ 30¹ 25¹ October 7¹ 9¹ 11¹ November 26¹ 29¹ December 3¹ 7¹ 10¹ 13¹ 16¹ 17¹ 19¹ 20¹ 23¹ 25¹ 26¹

P. atricapillus

1902 January 4¹ 7¹ 9¹ 11¹ 14¹ 17¹ 20¹ 21¹ 22¹ 26¹ 27¹ 28¹ 31¹ February 13¹ 15¹ 18¹ 21¹ 27¹ March 13¹ 19¹ 26¹ 27¹ April 4¹ 8¹ 9¹ July 12¹ August 2¹ 4¹ 10¹ 11¹ 20¹ 21¹ 30¹ November 12¹ 4¹ 5¹ 23¹ 27¹ December 3¹ 8¹ 11¹ 15¹ 18¹ 22¹ 25¹ 30¹ 31¹

1903 January 4¹ 5¹ 6¹ 7¹ 8¹ 12¹ 13¹ 14¹ 15¹ 16¹ 17¹ 18¹ 19¹ 20¹ 21¹ 22¹ 23¹ 24¹ 25¹ 26¹ 27¹ 29¹ 30¹ February 2¹ 3¹ 4¹ 5¹ 6¹ 9¹ 10¹ 11¹ 13¹ (February) 14¹ 23¹ 24¹ 26¹ 27¹ 28¹ March 2¹ 3¹ 6¹ 7¹ 8¹ 10¹ 11¹ 12¹ (March) 16¹ 17¹ 18¹ 19¹ 20¹ 23¹ 26¹ 31¹ April 1¹ 2¹ 7¹ 8¹ 10¹ 14¹ May 2¹ July 11¹ 13¹ 18¹ 25¹ 27¹ September 4¹ 5¹ 8¹ 9¹ 11¹ 22¹ 23¹ 24¹ 29¹ November 2¹ 3¹ 4¹ 5¹ 7¹ 9¹ 12¹ 13¹ 18¹ 19¹ 28¹ 30¹ December 1¹ 3¹ 4¹ 5¹ 7¹ 8¹ 9¹ 10¹ 12¹ 14¹ 15¹ 16¹ 17¹ 18¹ 19¹ 21¹ 22¹ 23¹ 24¹ 26¹ 28¹ 29¹ 30¹

1904 January 1¹ 2¹ 4¹ 5¹ 11¹ 12¹ 13¹ 14¹ 15¹ 16¹ 18¹ 19¹ 20¹ 25¹ 26¹ 27¹ 28¹ 29¹ 30¹ February 1¹ 2¹ 3¹ 4¹ 5¹ 8¹ 9¹ 10¹ 11¹ 12¹ 13¹ 15¹ 16¹ 17¹ 18¹ 20¹ 22¹ 24¹ March 3¹ 5¹ 14¹ 15¹ 18¹ 19¹ 21¹ (March) 22¹ 29¹ 29¹ 30¹ April 1¹ 4¹ 5¹ 6¹ 11¹ 12¹ 13¹ 14¹ 15¹ 19¹ 20¹ August 3¹ 27¹ 31¹ October 8¹ November 3¹ 7¹ 9¹ 14¹ 19¹ December 14¹ (December) 15¹ 16¹ 17¹ 18¹ 19¹ 20¹ 21¹ 22¹ 23¹ 24¹ 25¹ 26¹ 27¹ 28¹ 29¹ 30¹ 31¹

The Garden,
Cambridge, Mass.

Parus atricapillus

52222

- 1905 January 1¹⁰ 3² 4² 5² 6² 7² 9⁴ 10² 11² 12² 13² 14² 16¹ 17¹ 18² 20² 24¹ 31²
February 8¹ 11² 14¹ 15¹ 16² 17¹ 20¹ 24² 28² March 1² 2² 5² 6² 7² 5³ 10² 11² 14² 15²
March 16³ 18³ 20² 21² 22² 23² 24¹ 25² 26² 27¹ 28² 29² 30² 31²
April 1² 3² 4¹ 5¹ 7² 8¹ 10¹ 11² 12¹ 14² 15² 17¹ 18² 20² 21¹ 28² 29² 30²
May 1² August 11² 26² September 11² October 7¹
November 1¹ 7¹ 11¹ December 6² 7² 8² 20² 22² 26² 31²
- 1906 January 4² 5² 6² 8² 9² 10² 11² 12² 13² 16² 17² 18² 19² 20² 22²
February 1² 2² 3² 4² 5² 6² 7² 8² 10² 13² 14² 15² 16² 17² 20² 22² 26²
 23² 24² 28² March 2¹ 5² 6² 7² 9² 12² 14² 22² 23² 27²
April 4² May 7² June 4² 7² 9² 12² 28² December 11² 12² 17² 21² 26²
 28² 31²
- 1907 January 2¹ 7¹ 29¹ February 1² 3² 4² 6² 7² 13² Patricapillus
 (February) 14² 15² 16² 19² 20² 21² 22² 25² 27² 28² March 1² 2² 4² 6² 7² 8² 9²
 (March) 12² 13² 15² 16² 18² 19² 21² 23² June 2² 27² Nov 2² 5² 6² 8² 9²
 (November) 11² 12² 18² 25² December 3¹ 19²
- 1908 March 2² 3² 4² 6² 9² 11² October 21¹ November 1¹ 4¹ 5¹ 6¹
 (November) 11¹ 12¹ December 9² 18² 19²
 (December) 20¹ 26²
- 9 January 3² 6² 12² 13² 18² 26² 28² 29²
February 1² 6² 8² 9² 10² 12² 18² March 7² October 15²
November 3² 4² 5² 6² 8² 10² 11² 12² 13² 15² 18²
 30² December 16² 18² 19² 21² 2
- 1910 January 7² 8² 14² 18² 23² April 11² October 6² 12² 26²
 " November 7² 8² 9² 11² 12² 21² 23² 26²
 " December 4² 5² 12² 13² 14² 15² 16² 17² 18² 19² 27² 30²
- 1911 January 2² 7² 8² 9² 10² 12² 17² 22² 31²
February 3² 6² 12² 13² 15² 19² 27² March 5² August 10²
November 2² 3² 7² 8² 22² 23² 25² 26² 27² 28²
December 3² 4² 6² 7² 10² 13² 14² 16² 18² 19² 20² 21² 22² 23² 27² 28² 29² 31²
- 1912 January 1² 6² 10² 12² 14² 15² 16² 22² 23² 26²
February 2² 4² 13² 15² 16² 17² 21² 22² 23² 25² 29²
March 1² 2² 4² 9² 10² 11² 14² 19² 20² 30²

Parus atricapillus

1889 Mass.

- May 27 Abington. - Bolles found a nest with eight eggs which nest, 8 eggs
were far advanced in incubation
- June 3 Wellesley Hills. - Nest with 7 young in a slender birch stub the nest, 7 young
top of which had been broken off (perhaps by boys after
the young had hatched) nearly level with the ~~top~~ rim of the
nest, which was broken by the recent rains. All the young except
the "runt" scrambled out of the nest when my companion pulled
the stub down and fluttered off feebly a few yards to the ground
where they scattered about in the grass. ~~When~~ In the nest they hisssed Young birds
like snakes when we rattled the bark of the stub. The old birds like snakes
were very bold coming to within a few feet of us and crying
chick - che - dee - dee - dee. The young answered them in similar
but feebler tones. The stump was less than 3 inches in diameter.
All the inside wood had been pecked out leaving only the bark
the nest was of the usual ^{which was foul with the excrement of the young!} felted wool, it was about 7 ft. above fordness of nest
the ground. Before we found this nest I heard these 6
calling te - deery te - deery call
- " 9 Wellesley. - A nest with 8 fresh eggs found by S. W. Dutton. Second laying?
- " 17 Taunton. - Mr. Francis took a set of 7 fresh eggs " "
- Dec. 13 Ashby. - Two flocks of 5 birds each, one flock accompanied by
two Sitta canadensis, the other by two S. canadensis, two Cathartes,
and four Regulus satrapa. Not then in white pine woods
not seen on or near Mt. Wataatic.
- " 15-16 Mt. Graylock. - Abundant, occurring both in spruces and
in hard wood timber in flocks of 3 to 5 birds, often
accompanied by Sitta canadensis. On one occasion a single
Parus atricapillus was found in company with a single Sitta.

1890 Mass.

Parus attricapillus.

June 28 Martha's Vineyard.

Three birds heard singing one in oak scrub, the other two in apple orchards. Song of one normal ; of the other two peculiar in that both notes (or all three) were on the same key or pitch which was that of the normal first note. I did not see any of these birds.

Parus stricifillus

- 1891 Mass.
- March 15 Waltham. - Boiles saw more Chickadees today than in any other day this year. They were all in flocks one flock containing eight birds another nearly as many with Cuckers and Kinglets interspersed. Perhaps this was a migratory "wave" Still in flocks.
- " 25 Scitton. - During a long tramp over good Chickadee country I saw only four birds, one pair and two singles. They were all in Irish runs or orchards and acted as if settled for the season. In pairs and singly.
- " 30 During the past week I have taken daily drives back into the country and nearly always have seen a few Chickadees all either Winter flocks broken up. pairs or single birds

May 31 to North Turo. - A bird excavating a cavity for its nest in a horizontal rail of a grape arbor. The rail was square about 4 in. in diameter & painted white. The bird had pulled a rapid hole in one side and hollowed out nearly the whole interior for a longitudinal space of about 12 inches leaving a mere shell. The cavity was apparently about finished but the bird worked at it for an hour or more early on the morning of June 1 and at about 2 P.M. on June 2. There was no sign of a nest. The ♂ Chickadee was giving the normal whistle on the morning of the 2^d. A Chickadee was heard May 31 in pitch pines nest

1893

Jan'y 31- Wentworth Buryford. - O. Bangs saw only one small flock during Feb 4. these five days which he spent in the woods near W. Fishery

1895

May 18 Provincetown. In some pitch pines near the town O. Bangs & I came upon a large flock of Chickadees this afternoon. He counted 12 & there were certainly more on three more. There were two D. virens & one D. discolor with them. They moved rapidly through the woods keeping close together & chinked along. In short they acted exactly like winter birds. It was cold & rainy at the time. flock in

Massachusetts.

Parus atricapillus

1862.

July 15. Concord On Balls Hill I noticed no birds except a Blue Jay and a Chickadee. The Chickadee was apparently entirely alone a fact which did not seem to weigh on his spirits in the least.

April 5. In the swamp behind Balls Hill a pair of Chickadees were at work on their nest in a birch stump. The hole had already been dug deep enough for the working birds to be out of sight.

Oct. 8 I hear the plover note of the Chickadee frequently these Indian summer days but the bird does not utter it steadily & persistently as in spring. I am inclined to consider it a true song note. So far as I know it is never given by the female nor by young birds.

Parus atricapillus.

1887 Mass.

May 12 Concord. In the Sandy Pond Woods this morning watched Both sexes
a pair of Chickadees rigging a hole in a poplar stump. working at
Bothe came and went bringing out shreds of dead wood, nest.
flying a few rods and dropping them after alighting. (Journ)

1878 Mass.

Aug. 9 Nantucket. This morning heard one in the tree in front
of my window. Only one I have ever seen there. (Journ)
Mass., Berkshire Co

July 2-4 Glendale (in a nest). Two or three. [Journ].

1899

Jan'y 3 Cambridge - For several days past a single Chickadee has Storing food
come to a lump of sweet honey in an apple tree in the in crevices
garden. It came this noon and began talking away small pieces of bark
of the sweet and depositing them in crevices of the bark of various
large trees near at hand, the old red cedar at the rear of our
house and one of the cherry trees in the garden being oftener
visited for this purpose. The pieces of sweet were of various sizes
and shapes but none were much larger than a plum cherry.
The bird tamped them firmly into the crevices with his bill,
keeping a sharp lookout the while. Once when he saw that
I was watching him he removed the piece to a distant tree
and on another occasion he did the same thing when an
English Sparrow approached although he had ^{just} been at considerable
pains to drive the piece of sweet into a deep crevice. No two
pieces were put in the same crevice or indeed very near
each other. This is the first time I have ever observed
the Chickadee storing food.

1900

Jan. 21 Haverhill. - Three or four seen in pairs on the sand dunes. C. H. Townsend

Parus atricapillus.

Concord, Mass.

1896. Buttrick's orchard, 8.30-9 A.M.

Female excavating hole in apple tree (dead stubby branch).

Hole in about 3 inches. Bird perched on edge of entrance reached in and down until only end of tail visible, pecked 5 or 6 times, then reappeared with bill full of chips, leaned far back and with a jerk of the head flung chips off to one side. During these changes of position the foothold was never shifted. Bird worked steadily for half-hour which I spent at spot. Male meanwhile hopping about in next tree feeding, but did not once assist female or even go to her. When I started him whistling he kept it up many minutes.

Parus atricapillus.

Peterborough, New Hampshire.

1892. Common. Song (phoebee) heard July 14 & 20 and Aug. 2 & 9.
July 5 A nest containing young about ready to fly found Aug. 9th. The
to
Aug. 15. hole was near the top of a pile that formed one of the outer
supports of the run way of the ice house at Cunningham Pond
and was fully 15 feet above the water.

Concord, Mass.

Scarce and in small flocks.

1898. The Chickadees are comparatively scarce this autumn and
Nov. 13-23. the flocks are small, rarely containing more than five or six
birds each and ordinarily not more than three or four. Last
autumn I met with many flocks which contained ten or twelve
birds each.

Nov. 27.

Quarrelling.

The Chickadees attacked the meat ravenously to-day. In
fact whenever I looked out I saw from two to five or six
flitting about it and helping themselves liberally by turns.
Once I saw one attack and drive another away from it, a rare
instance, I fancy, for ordinarily the Chickadee is one of the
most unselfish and amiable of all birds.

Parus atricapillus.

Concord, Mass.

Still eating suet. Their May call note.

1899. Two ragged, soiled, bedraggled-looking Chickadees visited
May 19. the suet at the cabin to-day and helped themselves freely.

The only sound they made was the low, querulous shè-de,
shò-de, or shè-der-de peculiar to this season. Is this a love
note? Chickadees are very scarce this spring.

Parus atricapillus.

Cambridge, Mass.

January birds in the Garden.

1899. The plucky little Chickadees, however, showed no fear
January. whatever of the Sparrows [English Sparrows at the suet] but
met them on all occasions with the same independent yet
friendly spirit which they display towards most other small
birds. Their numbers apparently varied from day to day but
the first flock evidently contained ten birds although only
twice during the month were they all seen together. I sus-
pected, however, that most of them really visited the suet
daily, coming singly or in parties of from two to five or six.
One member of the flock was wholly destitute of a tail and
was accordingly christened (by Walter) "Sine cauda". When
several birds appeared in company they usually ate singly,
each awaiting his turn with evident impatience but great good
temper and when his opportunity came flitting to the coveted
perch the instant his predecessor vacated it. Apparently
there was some understanding among them as to the maximum
length of time during which each bird might occupy it for
they changed places very frequently usually once every two
minutes or less. The same bird, however, often returned more
than once before his appetite was appeased.

Occasionally two birds would alight on the suet at once;
if on opposite sides or one at the top, the other clinging
back downward beneath, neither seemed to object to the other's

Parus atricapillus.

Cambridge, Mass.

January birds in the Garden.

1899. presence - possibly because it was not noticed - but if side
January by side a short but spirited contest for exclusive possession
(No.2) invariably occurred. Twice, however, I saw a Chickadee and an
English Sparrow, perched on the top of the suet in full view
of, and scarce six inches from, one another, continue eating
for several minutes, neither bird paying the slightest appar-
ent attention to his vis-a-vis. On another occasion a Chick-
adee and a Downy Woodpecker were observed eating on opposite
sides of the suet at the same time. The Chickadees visited
the suet at all hours of the day but oftenest during the fore-
noon. I heard them give the phoebe call a few times but not
with much spirit.

February birds in the Garden.

Almost constantly present in numbers varying from one to
February. eight. When the weather was clear and mild their visits to
the suet were brief and infrequent; when cold they came to it
oftener and stayed longer; during the great snow storm of the
12th and 13th they scarcely left it from daylight to dark.
On the 13th there were six in the crab apple tree most of the
time and sometimes as many as three feeding on opposite sides
of the suet at once. A fourth alighted on it for a moment
but did not stay. Chickadees invariably pick at suet with
half-opened bills.

Parus atricapillus.

Cambridge, Mass.

1899. Once in January and very frequently during February, February, usually when the weather was clear and mild, we saw Chickadees (No. 2) carrying small fragments of suet to various parts of the garden and concealing them in crevices or behind loose scales of bark as well as in dense evergreen foliage. Possibly only one bird ^{had} adopted this practice, though we have reason to think that there were more but on no occasion was more than one engaged at it at the same time. He worked very busily and steadily, making a trip every minute or two and never using the same hiding place twice although he often took several fragments to different parts of the same tree. He tamped them firmly in place with his bill before leaving them and sometimes returned, shortly afterwards, apparently to make sure that they were all right. Once he was seen to remove a piece which, only a few minutes before, ~~he~~ he had fixed with unusual care. Some of the fragments were hidden in the tree in which the lump of suet hung but the majority were taken distances varying from ten to fifty yards.

Our tailless bird, "Sine cauda", was seen almost daily up to the 17th after which he disappeared.

Birds of Upper St. John
Batchelder,

7. *Parus atricapillus* Linn. BLACK-CAPPED CHICKADEE.—At Grand Falls it was not uncommon. Some days four or five pairs would be seen, on others none at all. At Fort Fairfield it was not very common, though seen occasionally. At Houlton "very common."

Bull. N. O. C. 7, April, 1882, p. 109

Birds within Ten Miles of Point
de Monts, Can. Comeau & Merriam.

6. *Parus atricapillus*. BLACK-CAPPED CHICKADEE.—A common resident.

Bull. N. O. C. 7, Oct., 1882, p. 234

Last Dates Migratory Birds observed by
E. D. Wintle, Fall 1886, Montreal, Can.

Oct. 18, Black-capped Chickadee,
*seen occasionally throughout the
winter here.*

O. & O. XI, Mar. 1886, p. 44.

Summer Birds of Bras D'Or Region
Cape Breton Id., N. S. J. Dwight, Jr.

55. *Parus atricapillus*.

Auk, 4, Jan., 1887, p. 16

Summer Bds. Restigouche Valley, N. B.
July, '88. J. Brittain and P. Cox, Jr.

Parus atricapillus. BLACK-CAPPED CHICKADEE.—Not uncommon.

Auk, VI, April, 1889, p. 110

Summer Birds of Sudbury, Ont.,
A. H. Alberger.

735. Black-capped Chickadee. Abundant.

O. & O. XV, June, 1890, p. 88

Dwight, Summer Birds of
Prince Edward Island.

Parus atricapillus. BLACK-CAPPED CHICKADEE.—Occasionally small roving families were encountered, so that it is probably a fairly common species.

Auk X, Jan, 1893, p. 14

Some Winter Birds of Nova Scotia. By W. H. Motzell.
30. *Parus atricapillus*. CHICKADEE.—A common resident.
Auk, XVI, July, 1900, p. 253.

Newfoundland Notes, A Trip up the
Humber River, Aug. 10-14, 1900.

48. *Parus atricapillus*. CHICKADEE.—Most abundant.

Louis H. Porter, New York City.

Auk, XVII, Jan., 1900, p. 73.

Birds of N.E. coast of Labrador
by Henry B. Bigelow.

80. *Parus atricapillus*. CHICKADEE.—Locally common in timbered
regions.

Auk, XIX, Jan., 1902, p. 80.

Summer Birds of the Cobalt Region,
Mississauga District, Ontario.
by Frederick C. Hebel. Auk XXIV, Jan., 1907, p. 52.

71. *Parus atricapillus*. CHICKADEE.—Very abundant everywhere.

Birds of Toronto, Canada,
by James H. Fleming.
Part II, Land Birds.
Auk, XXIV, Jan., 1907, p. 86.

279. *Parus atricapillus*. BLACK-CAPPED CHICKADEE.—Common resi-
dent, breeds.

Parus atricapillus

1898: Penobscot Bay, Maine.

Deer Island. June 21 (2)

" " July 1 $\frac{1}{2}$ 4 $\frac{1}{2}$ 13 $\frac{1}{2}$ 6²

Dumpling Island. June 22 $\frac{1}{2}$

Campbell " July 6 $\frac{2}{2}$

Heron " " 9 (2)

Dumpling Island. June 22. a ♂ tame, closely scrutinized through glass at ten feet, apparently normal in coloring but looking unusually large, had a unique & very remarkable call of from 4 to 6 loud, ringing whistles, all on same key in tone & volume resembling those of song of *T. albicollis*. This he repeated fifty times or more flying to & from about me when I gave a whistled imitation. I had concluded that this was his song when to my surprise he changed it for a perfectly normal phoe-be (or te-ding)

Summer Birds Tim Pond Me. by F. H. C.

Black-capped Chickadee, (*Parus atricapillus*). A few seen.

O. & O. XI, Feb. 1886, p. 25

Birds of Dead River Region, Me. F. H. C.

9. *Parus atricapillus*, (Black-capped Chickadee). Commonly observed this species in all portions of the region except the extreme northern part. A few nests were found, nidification the same as in other States. None were noticed in winter save a small flock of six seen in Farmington.

O. & O. XI, Aug. 1886, p. 115

Fall Birds of Northern Maine. 1887.
F. H. Carpenter.

Chickadee (*Parus atricapillus*). Its social qualities placed it under frequent observation, but even this species could not be considered as common.

O. & O. XII, Nov. 1887 p. 183

Common Birds of Boothbay
Coast of Maine. F. H. Carpenter, 1890.

735. Chickadee. Abundant at Boothbay and Camden, in the woods.

O. and O. 15, Nov. 1890, p. 162

Parus atricapillus. — Not common, Shelburne, N. H. Aug. 8-29-1865. R. D.

Mt. Washington, N. H. 16.

Sept. 13. 1884 One seen among the rocks
about 200 yds. down the carriage road
from the Summit (E. P. Ordway)

Parus atricapillus.

Winter Birds of Webster, N. H. by Falco.

Black-capped Chickadee, (*Parus atricapillus*).

O. & O. X. Jan. 1885. p. 14

Summer Birds of Presidential Range,
White Mts. A. P. Chadbourne

41. *Parus atricapillus*. CHICKADEE.—Extends from the base to the limit of timber. None were seen in the dwarf spruces or low matted growth, and above 3000 feet it was less plenty than *P. hudsonicus*. The latter seems to replace it almost entirely in Tuckerman's Ravine above 4100 feet, and also around the Half-way House (3800 feet).

Auk, 4, April 1887. p. 107

Birds Obsvd. near Holderness, N. H.
June 4-12, '85, and 4-11, '86. W. Faxon

61. *Parus atricapillus*. CHICKADEE.—Common.

Auk, V. April, 1888. p. 151

Bds. Obs. in Franconia, N. H. June 11-21
'86, and June 4-Aug. 1, '87. W. Faxon

79. *Parus atricapillus*. CHICKADEE.—Not very common.

Auk, V. April, 1888. p. 153

Bds. Obs. at Franconia and Bethlehem
N. H. July-August, 1874. J. A. Allen

46. *Parus atricapillus*. Common.

Auk, V. April, 1888. p. 156

Birds Obs. at Moultonboro, N. H.
July 21-Aug. 11, 1883. F. H. Allen

Parus atricapillus.—Common.

Auk, VI. Jan., 1889. p. 79

Birds Obs. at Bridgewater, N.H.
July 12-Sept. 4, 1883. F.H. Allen

Parus atricapillus.—Common.

Auk, VI. Jan., 1889, p. 77

Bird Notes, Central N. H. Winter '91-92
J. H. Johnson

Chickadees, plenty.

C. & O. Vol. 17, May 1892 p. 72

Lewey Island, New Hampshire

1894

Jan 11 11 31 11 11 11 11
11 11 11 11 11 11 11

[Faint handwritten notes, likely bleed-through from the reverse side of the page.]

Lewey Island, New Hampshire

1890

[Faint handwritten notes, likely bleed-through from the reverse side of the page.]

Two notes on Chickadees are given under
Notes from Tiptonville Vt. by C. C. Gray.

O. & O. X. Jan. 1885. p. 10.

Winter Birds of Southern Vermont, 1885

[Black-capped Chickadee,]

A. J. Johnson. Hydenville Vt.

O. & O. X. Apr. 1885. p. 63

Winter Birds of Southern Vermont, 1885.²⁷

There has been a noticeable absence of
the Black-capped Chickadee near this
winter. A. J. Johnson. Hydenville, Vt.

O. & O. X. Apr. 1885. p. 63.

General Note on Chickadees

78. *Parus atricapillus*. CHICKADEE.—Fairly common on the lower
slopes.

By ARTHUR H. HANCOCK

1885. O. & O. X. 1001, p. 646

Parus atr. ^{W.} Dec. 29¹⁸ ^{B.} 31²⁰ 1884 E. Mass.

Princeton & Rutland, Mass. Aug. 2-1886

5 *Parus atricap.* ^{several}

E. Mass. 1886

Parus at. Jan. 1²⁰ 31²⁰ Feb. 4²⁰ 5²⁰ 6²⁰ 8²⁰ 9²⁰ atly chad.

Apr. 8²⁰ June 16²⁰ Sept. 30²⁰ Oct. 2²⁰ 5²⁰

Nov. 30²⁰

2 *P. atricapillus* Nov. 8²⁵ E. Mass. 1886.

Nov. 21-23. 3. *Parus atricapillus* - Abundant in

pitch pines (*P. rigida*) Great Id. Mass. ~~1886~~ 1886.

P. Jan. 2²⁵ 15²⁵ 17²⁵ ✓

Winchendon, Mass. June, 1888.

Great Id. Mass. Dec. 1888.

Parus atricapillus Dec. 15th - 16th (1888)

Falmouth, Mass. 1889.

Near Cambridge, Mass., Co.

Parus atricapillus Mass. - near Cambridge Jan'y - April, 1886.

1886
 Jan'y 29th
 " Feb. 9th, March 6th, 2
 " Mch. 6th - 28th
 " April 9th - 19th - 23rd M.

Mass. (near Cambridge)

1887 31.

1887.

March 21st 2 pairs

Parus atricapillus.

Mass. (near Cambridge).

32.

1887

April 6th

Parus atricapillus.

Mass. (near Concord).

33.

1887

April 7th - 12th

May 8th - 10th - 11th - 16th - 23rd - 25th - ^{nest}_{6 eggs}

June 2nd - 4th - 16th - 17th

July 10th - 15th - 23rd

Aug. 1st - 10th - 13th - 15th - 17th

Parus atricapillus

* singing (in the box)

Mass. (Wichendon)

34.

1887

June 25th - 26th 1887

" 12th - 13th - 15th - 17th 1888

Apparently not as common as in Middlesex Co.

Parus atricapillus

1887

Oct. 4⁶ 5¹⁵
 Nov. 9¹⁰ 20¹²
 Dec. 14¹⁰
 1888

March 22¹⁵⁻²⁴ 24¹⁰

Feb. 13² - ~~Apr. 4⁶ 9⁶ 12⁴~~ Apr. 24² - 25²
 Oct. 26¹⁰ 27¹⁰ Nov. 2¹⁰ 6¹⁰ 13¹⁰ 17¹⁰
 Parus atricapillus * *hibernus*

Mass. (near Concord).

26.

1888

APR 5⁶ - 9⁶ - 12³*Parus atricapillus*

Birds Known to Pass Breeding Season
 nr. Winchendon, Mass. Wm. Brewster

[77. Parus atricapillus.

Auk, V, Oct., 1888, p. 889

1888

Chickadee

S. W. Denton, 30.

June 4. Winney found a nest today with 7
 fresh eggs. I saw 2 in different places and
 think they had nests but am not certain
 they kept in one place and occasionally
 uttered their note of chick-a-dee.

1889.

Parus atricapillus

Wellesley, Mass.

31.

April 4. pair seen nest building.

S. W. Denton.

Chickadee

S. W. Denton. 40.

May 27. Saw a pair breeding in a high brick stump
on the bank of Charles river the stump overhanging the
water they had excavated a hole several inches
into the top of the stump. Winslow found two sets of
eggs today in fresh birds incubated. Both in birds
stumps.

Winter Notes from Taunton, Mass.
J. H. Cahoon.

Chickadees, are not as numerous as usual.

O. & O. XI. May. 1886. p. 77

Birds of Bristol County, Mass.
F. W. Andros.

Parus atricapillus Linn., Chickadee. Res-
ident, common. Breeds.

O. & O. XII, Sept. 1887 p. 141

Bds. Obs. near Sheffield, Berkshire
Co., Mass. June 17-20, '88. W. Faxon

71. *Parus atricapillus*. CHICKADEE.—Not many were seen.

Auk, VI. Jan., 1889. p. 46

Bds. Obs. near Graylock Mt. Berkshire
Co. Mass. June 28-July 16. W. Faxon

72. *Parus atricapillus*. CHICKADEE.—Rather common.

Auk, VI. April, 1889. p. 105

Mass. (Middlesex Co.)

Parus atricapillus

46.

1885

Singing in Dec.

Dec. 7

At 11 a. m. to-day I heard a Chickadee singing loudly and continuously in the trees near our house. The wind was blowing a gale at the time and the morning very cold. It is rare to hear the Chickadee ~~in~~ this te-derry at all at this season.

Mass. (Middlesex Co.)

Parus atricapillus

47.

1886

In pairs.

April 9

During a long tramp in Belmont to-day I saw only four Chickadees, divided into two pairs. I have not seen a flock for over a month but then I have not seen out at all regularly or in the proper places. In Cambridge I saw a pair at least three weeks ago. Probably the flocks break up (or migrate!) early in March at latest.

Mass. (Watertown & Belmont)

1888

Parus atricapillus

48.

1888

Still in flocks - Double note

March 22

Saw two pairs and three flocks the latter of five or six birds each.

In one flock three ♂'s were whistling at once. One of them doubled the usual te-derry thus te-derry-te-derry-te-derry producing very much the effect of the song of P. carolinensis. I was within a few yards of the bird & feel sure it was a true P. atricapillus.

W. Townsend, Ashby :- Apparently not very common. A brood of young seen on the 28th & another on the 29th but the latter date has two eggs for the chickadee nest. An old bird fed the young on the outside of a carp cocoon which it failed to pierce with some difficulty. Not detected on 28th. W. Townsend

Chickadees. Parus atricapillus.

Wellsley Hills, Mass.

The same farmer is the man who for the past two winters has fed the Chickadees from his hand in a certain swamp (as I did too, last winter). This year we had not found them till this forenoon. Then in crossing the upper end of the swamp, we heard a Chickadee's notes, and stopped. Three or four birds came up, Wyman took a bit of bread from his pocket, held it out, and instantly one of them perched on his hand and ate. This interests me as being proof that birds winter year after year in the same spot.

Bradford Torrey (letter December 13, 1896).

1903. Parus atricapillus Cambridge Mass.
June 6-13, On June 6, 1903, the daughter of Mr. J. C. Scargie discovered a Chickadee's nest on her father's place on Brattle St. near Mt. Auburn. The hole was in a fence post supporting a vine-covered trellis a fence in the yard some 25 ft. from the house. It was about 3 ft. above the ground. It contained young at the time. The old bird quite fearlessly flew in front, feeding the young. The little bird left the nest on June 13 -

Connecticut, June, 1899.

Pinus strobus

25.

June 5th 6th 7th 8th 9th Pinus strobus Saybrook
young in nest.

" 22nd 23rd 24th 25th Indover

Apparently much less numerous
about Saybrook than in Mass.
probably owing to the total
absence of pines. In the hill
country at & near Andover there
were a few pines, both white
& pitch, and an increased
number of chestnut long
scarcely in both sections.

Just found June 9 on road which
is not much new land built
in old hole of Down Road in
a height of 20 ft. Pinus strobus
young in the nest. (Census here)

Birds observed in Naval Hospital
Grounds, Brooklyn. G. H. Coues

22. *Parus atricapillus*. CHICKADEE. — Common.

Bull. N. O. C. 4, Jan., 1879, p. 32

Birds of the Adirondack Region.
C. H. Merriam.

12. *Parus atricapillus*, Linn. BLACK-CAPPED CHICKADEE. — Common;
breeding plentifully.

Bull. N. O. C. 6, Oct., 1881, p. 226

Birds at Fort Hamilton, L. I., Berrier

Why such a common bird as
the Black-capped Tit should have been wanting I cannot imagine.
It would be interesting to know whether this species wintered in
unusual abundance north of Long Island.

Winter of 1888.

Bull. N. O. C. 6, Jan., 1881, p. 12.

Found on *Carolinus Isld.* also, a Chicka-
dee's nest containing 8 eggs. — Moses B.
Griffing, Shelter Island, N. Y. May 26th,
1883. O. & O. VIII, Dec. 1883, p. 95

Notes on the Spring Migration of Birds in the
Northern Adirondacks [Ayer], New York [1901].
April 16. Occurring during the whole season.
Chickadee. Tolerably common.

E. A. Sterling, Brooklyn, Pa.

Auk, XIX, July, 1902, p. 226.

Birds Tioga Co., N. Y. Alden Loring.

41. Chickadee. Common. Found in the
thick woods and groves; their food consists of
insects and flies. They also like the society
of other birds such as Nuthatches and Kinglets.
This little bird is one of the few who do not
migrate, and seems as happy on the coldest
day in winter as in midsummer.

O. & O. XV, June, 1890, p. 81

Birds of Western North Carolina.
William Brewster.

95. *Parus atricapillus*. BLACK-CAPPED CHICKADEE.—This northern species, which, if I am not mistaken, has never been previously found south of Virginia, proved to be not uncommon in the 'balsam' belt of the Black Mountains. Its notes and habits here were precisely the same as at the North, and very different from those of *P. carolinensis*, with which it mingled along the lower borders of its range. Like most of the birds inhabiting these mountains, it was exceedingly shy, so much so indeed that I had the greatest difficulty in getting specimens. These represent two pairs, of which both females were incubating. All four differ from northern examples in being smaller, with much slenderer, more acute bills, and generally deeper, browner tints, especially on the back and sides, which are nearly as richly colored as in autumnal specimens from New England. These characteristics, if constant, should perhaps entitle the North Carolina form to subspecific recognition.

Ank. 8, April, 1886. p.177

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Descriptions of First Plumage of Certain North Am. Bbs. Wm. Brewster.

11. *Parus atricapillus*.

First plumage: male. Back very dark slate without any tinge of brownish. Beneath salmon-color, faintest on breast, most pronounced on sides and anal region. The black on throat and pileum scarcely less clear than in adult. From specimen in my collection shot at Concord, Mass., June 17, 1871.

From about the time of pairing in spring till early autumn this Titmouse wears a plumage which has been almost, if not entirely, ignored by writers. The back is clear ashy without any brownish or olivaceous washing except in a few specimens on the rump. The under parts are white, with barely a trace of faintest salmon on the sides of the body; while the white margining on the remiges is much narrowed and on many of the feathers replaced by ashy. It may be objected that this generally paler condition is due to the wearing of the feathers consequent upon the continual passing of the birds in and out of their nesting cavities, but not all of the specimens before me are *in worn* plumage; one pair, taken May 12, 1876, being in remarkably perfect dress. At all events, whatever the cause, this peculiar stage is so universally characteristic of all specimens (at least, New England ones) taken at this season, that it certainly merits a fuller recognition than it has up to this time received. Five specimens examined, all collected in Massachusetts in May or June.

Bull. N. O. C. 3, Jan., 1878, p. 19-20.

Albinism and Melanism in North American Birds. Ruthven Dana.

Mr. C. J. Maynard has in his possession a Black-capped Titmouse with the two middle tail-feathers white. This is the only instance of albinism occurring among the *Paridae* of which I have heard.

Bull. N. O. C. 4, Jan., 1879, p. 28

The Singing of Birds, E. P. Bicknell.

Parus atricapillus. BLACK-CAPPED CHICKADEE.

My data on the vocalization of this bird are not sufficiently full to enable me to determine whether any of its notes pertain exclusively to a particular time of the year. The ordinary notes, which have conferred the name 'Chick-a-dee,' are, however, characteristic of no season, but may be heard through every month. Another vocal attribute of the species is a clear, double-syllabled whistle. This suggests the song of the Wood Pewee, but there is no true similarity between the notes of the two birds. I have no record of having heard these notes of the Chickadee in the late fall, or in the winter before the vernal influence had begun to assert itself. From such time onward, into and often through the summer, the whistling notes may be occasionally heard, but they seem never to be very constantly uttered through any season, even though the birds may be continually near us. In February, and in October, I have heard them (February 12 to October 14), and in all the intervening months. The species has also a short run of low, musically modulated notes, in fact, a short warble. This is to be heard at the same seasons as the whistling, and probably both are true song notes.

Both adult and young are in full moult in August, though with many individuals the growth of feathers does not cease until December. Through all this time the birds develop little fat, and I have found them through the winter with almost no adipose protection.

Auk, I, April, 1884. p. 185

Auk, XIV, Jan., 1897, p. 99.

The Whistled Call of *Parus atricapillus* common to both Sexes.—The well-known spring and summer call of the Chickadee, consisting of three clear whistles, is uttered by both sexes. I am not aware that record has ever been made of this fact, which I determined some time ago by the judicious use of firearms.—JONATHAN DWIGHT, JR., M. D., *New York City*.

Mass. (Concord)

Parus atricapillus

Nest & eggs.

MAY 25 1887

A nest in a maple stub on edge of ^{swamp} ~~swamp~~.
Hole heart-shaped, pointed end down, outlines
irregular or ragged. Cavity evidently excavated
by birds; wood perfectly clean and bright
inside. Six eggs hard set on. ♀ at home.
When I inserted my finger she pecked at
it bravely but when I withdrew it she
came out. Nest a wadded or rather fatted
affair. Eggs not in the best condition.

Portland, Ct. - W. W. Coe.

✓ But the sweetest of all this year is this:
When I built an addition to my horse barn
I was obliged to cut down an old cherry
tree, which I did, leaving a stump some six
feet high, into which I placed a ring to
hitch my horses to. One morning I no-
ticed a pair of Chickadees at work on the
stump, and I gave them my closest atten-
tion. My man hitched the horses to this
stump every morning as he cleaned them
off, and although the horses' heads were
within a foot of their hole they kept at
work and finally laid their eggs and brought
forth the young in good order. By the
aid of a mirror I threw the light into the
hole, so that I could see all that was going
on. They began work April 27th, carried
in nesting material May 10th, began set-
ting May 17th, hatched May 26th, and the
young flew June 12th. What I notice in
this as singular is the fact that we usually
find these birds breeding in the thickest of
swamps and almost always in white birch
stumps; and that they should come into
the open and so close to the house, and
more: they worked most systematically,
each working and taking out chips. One
would carry away the chip that he (or she)
had pecked out and fly to a pear tree near by
and "wipe" it off her bill, when the other
would at once go in and go to work. They
did it so regularly that, as one went out of
the hole the other met it about half way
between the pear and cherry tree. — W.
W. Coe, Portland, Ct. O. & O. VII, Dec. 1882, p. 183/84

Swamp hole.

Four specimens taken June 2 on
Beale Mt. differ from another
specimen in being smaller with
bladder, more acute bill, and
generally deeper, brown coloration. The
bill and legs especially are much
so richly colored as in autumnal
specimens from New England, however
their differences from constant in
all birds from this region. The
form valid again sub. specific
variation.

Common Names of American Birds.. Ingersoll.

57

The next names worthy of notice are those of the *Paridæ*. *Tit* originally signified something small; by itself it stood as a name of a small bird. But our word is confounded with the Angle-Saxon *māse*, the name of several sorts of little birds in that language. It has no connection with "mouse," which comes from a different root; therefore its plural should not be titmice, which involves this error, but titmouses. The root of *māse* signifies "to diminish," and hence the latter part of the name, as well as the former, refers to the small size of the birds—about the smallest, indeed, with which northern nations are popularly acquainted. *Tomtit* is an affectionate nickname suggested by alliteration, like Tom Thumb. *Bull. N. O. C. 8, April. 1888, p.*

76.

Common Names of Birds.. Ingersoll.

No

explanation is required for the word *Chickadee* belonging to several species of *Parus*, for anyone who has ever heard its

"—Saucy note
Out of sound heart and merry throat."

Bull. N. O. C. 8, April. 1888, p. 77.

1831. *Out-of-door Papers. Winter Fishing.* By Fannie Pearson Hardy. *Ibid.*, p. 363. — Notes on a few winter birds in Maine, especially *Parus atricapillus*. *For. & Stream, Vol. 83, Nov. 28.*

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Ank. XV, April, 1898, pp. 150-5.
BLACK-CAPPED CHICKADEE. (*Parus atricapillus* Linn.).

Twenty-eight stomachs were secured; the first nineteen during the winter, and the last nine in the spring, being the same periods in which the Nuthatches were collected. The contents were tabulated as for the Nuthatches.

Vegetable Food.

During the winter 39.3 per cent of the food was vegetable, though one-third of the stomachs contained no seeds whatever, while in the spring the food was wholly insect. The seeds identified were one *Avena sativa*, and one *Ambrosia artemisiifolia*, being practically the same as those upon which the Nuthatch fed.

Difference in Food as Affected by Season.

The same increase of insect food in the spring over that in the winter is seen as for the Nuthatch. During the winter 70.7 per cent of the food was animal, while in the spring no vegetable matter whatever was eaten. No trace of gravel was found in any of the stomachs. This is doubtless due to the small amount of vegetable food eaten, removing the necessity of a large amount of grinding to bring the food into a digestible condition. The total amount of food also remained nearly constant, being .48 c.c. in the winter and .53 c.c. in the spring. Even more markedly than in the Nuthatches, it is seen that in the spring far more adults, in comparison with the number of eggs and larvæ, were eaten than in winter. Whereas in the winter about $\frac{2}{3}$ of the insect forms were adult, $\frac{2}{3}$ larvæ, and $\frac{1}{3}$ eggs; in the spring, $\frac{4}{5}$ were adult, $\frac{1}{5}$ larvæ, and $\frac{1}{5}$ eggs. While the total bulk of the food in the spring was $\frac{1}{7}$ larger than that of the winter, yet there were over sixty times more forms eaten in the winter than in the spring, which was largely due to the enormous number of Reduviid eggs then

The Economic Value of the
White-bellied Nuthatch and
Black-capped Chickadee.
by E. Dwight Sanderson.

consumed. The fact that the spring larvæ had not yet emerged to any extent and that the adults were becoming active must also be carefully considered.

Character of Food.

Hémiptera, eggs and adults, formed by far the greater part of the food of the first period, with Coleoptera and Lepidoptera next, or possibly from an economic standpoint of equal importance. During the second period, the greater part of the food was adult beetles, with a large portion of adult Lepidoptera. In two stomachs, parasitic worms of considerable size were found. One was of a small, white and cylindrical form, while the other was white, but more flattened, with longer segments, and a true tape-worm.

Several well known insect pests were found in considerable numbers. Among them, four — *Buccatrix* sp? — pupæ in two stomachs; 62 Noctuid larvæ in five; 105 Coleopterous boring larvæ in two; 15 *Aphis mali* eggs in 28; and 77 *Mytilaspis pomorum* scales in four stomachs. (Each of the latter doubtless covered fifty to seventy-five eggs.) The only beneficial forms found were nine adult Carabidæ in four stomachs and possibly the 450 Reduviid eggs secured from twelve stomachs may also be so considered, but the amount of their value is very uncertain. Thus it is seen, that injury done by eating beneficial insects is very small and of doubtful amount, while almost the entire food is composed of more or less noxious forms. The injurious forms were also eaten in large numbers, showing that the bird would be of considerable value toward their removal when placed among a large number of them, and undoubtedly would be especially useful in destroying a pest during the winter season. In fact, Prof. Forbush has shown by actual experiment (Mass. Crop Report, July, 1895, Ser. '95, Bulletin No. 3. Noticed in Auk Vol. XII, p. 383, 1895) that when these birds are present in the winter the destruction of the eggs at that time rendered it possible for the summer birds to destroy all the larvæ during a severe attack of the canker-worm, and the orchard thus produced a good yield, whereas elsewhere the trees were largely defoliated. The

following list gives the contents in detail: Numbers 2 and 3 were secured on Jan. 19; 4, 5 and 6 on Jan. 20; 12, 13, 15, 16, 17 and 18 on Feb. 21; 27 and 28 on Feb. 16; 36, 37, 38, 39 and 40 on Feb. 24; 42, Feb. 25; 53, 54, 55, 58, 59, 60, 61, 62 and 63 on Apr. 17.

List of Insects Found in 28 Stomachs of the Black-capped Chickadee.

Lepidoptera: Tineidæ—*Bucculatrix* sp?—4 pupæ in Nos. 28 and 40; Ennomidæ—*Ennomos magnarius*,—27 eggs in Nos. 27 and 39; Noctuidæ—1 *Catocala* (?)—egg in No. 27, 62 larvæ in Nos. 2, 16, 27, 28 and 38. Winter, 6 pupæ, 66 larvæ, and 26 eggs; spring, 6 adults and 1 larva. Total Lepidoptera: adults, 6; pupæ, 6; larvæ, 67; eggs, 26; in 9 stomachs.

Diptera: Adults, 1; larvæ, 7; in 4 stomachs. All in winter.

Coleoptera: Carabidæ.—9 adults in Nos. 6, 15, 40, and 43; Scarabidæ, 3 adults in Nos. 53 and 60; Cerambycidæ, 2 pupæ in No. 39; boring larvæ, 105 in Nos. 27 and 28. Winter, 29 adults, 2 pupæ, and 118 larvæ; spring, 18 adults. Total Coleoptera—adults, 7; pupæ, 2; larvæ, 118; in 16 stomachs.

Orthoptera: 3 eggs in No. 12. (Winter.)

Hemiptera: Tingitidæ—*Piesma cineria*—3 adults in Nos. 27 and 42; Reduviidæ, 450 eggs of two species in 12 stomachs; Pentatomidæ—*Stivetrus anchorago*—7 eggs in No. 5; Aphidæ—*Aphis mali*—15 eggs in No. 28; Coccidæ—*Mytilaspis pomorum* scales, 77 in Nos. 15, 18, 27, and 39. Winter, 108 adults and 461 eggs; spring, 5 adults. Total Hemiptera—adults, 93; eggs, 466; in 15 stomachs.

Total winter, 125 adults, 8 pupæ, 193 larvæ, and 504 eggs; spring, 24 adults, 1 larva, 5 eggs; in 15 stomachs. Total Insect Forms—adults, 149; pupæ, 8; larvæ, 194; eggs, 494 = 845. Arachnida, 25.

Habits.

The Chickadee's habits of life also commend them as being beneficial. They are usually found in small flocks of from six to a dozen, of which the larger number are females. These often mix with those of Goldfinches and Tree Sparrows, or are found in company with a pair of Nuthatches, during the winter, but become more independent as spring advances and there is an abundance of bird life all about them. Over half of my specimens were secured in bushes on low, damp, marshy ground, or along a creek or roadside. They often descend to the ground in marsh land

and scratch among the dead rushes for any insects there. I am inclined to think that most of the Reduviid eggs were secured on such marshy ground. Tamarack was a favorite resort with many. About one-fourth were taken from oak trees, but on these they searched for insects upon the tips of the smooth branches, rather than on the rough trunk as do the Nuthatches. Two were secured in an apple orchard, while five others were seen coming from one. Many times they were seen in orchards near dwellings, where I was unable to secure them by use of the gun. When feeding on heavy timber, they frequent only the edges, where the injurious insects are invariably the most plentiful.

Abundance.

Owing to the fact that they go in flocks and are therefore not so evenly distributed as the Nuthatches, it is more difficult to determine their abundance. Although, on the average, about two were secured for every mile travelled, yet as they go in small flocks several were generally secured in an immediate vicinity. A flock of seven Chickadees is doubtless a fair average for each square mile, and in some parts of the State, especially the southeastern, I am sure that they are much more abundant in orchards than here.

Ability to Check Insect Pests.

If fifty-five insects were consumed per day by each bird, as will be shown to be the case, 385 would be consumed per day, and about 137,500 per year in each square mile. Thus upon the land surface of Michigan there will annually be about 8,000,000,000 insects destroyed by the Chickadees alone. Surely no mean number.

During the summer after the young have been reared, the number of individuals should be for some time at least tripled, giving us 20 to 25 per square mile. The census of 1890 shows that there are about 8,500,000 apple trees planted in Michigan, and of the fruit trees, apple orchards are the Chickadee's favorite haunt. This would give an average of about 150 trees per square

mile—enough for four ordinary sized orchards—or the average conditions existing in the better part of the State. As the worst period of insect attack is during and after the breeding season, this would allow six birds to each orchard.

Nineteen Chickadees contained a total of 830 insect forms, a large majority of which were noxious, and the remainder of a doubtful character as regards their value. Thus the Chickadees which it would be possible to secure in a fair sized orchard, a half-dozen, would consume at least 275 forms a day, but probably 350 would be a much fairer estimate, as the larvæ are quite rapidly digested and many were so finely divided as to render numerous individuals wholly indistinguishable. Now if these birds could be persuaded to nest here and rear their young, which would probably average five in number, 1200 insects would be required per day to feed the young and old birds. Professor Forbush states that 5000 canker-worms will strip a *large* apple tree. Thus the number of insects eaten would be sufficient to prevent the defoliation of a *large* tree every four days, and young trees in proportion, with no expense whatever to the farmer for labor or insecticides. Of course these compilations are largely of a speculative character, as unfortunately we have but few experiments and little accurate data, but they cannot but be highly suggestive.

Value of Winter Residence.

But this fails to take into account the large number of eggs eaten in the winter, from which the larvæ, when hatched, might be impossible to destroy—as shown by the observations of Prof. Forbush cited above. Again, the destruction of adult insects and larvæ during the winter is far more valuable than later, because they are mostly the ones which lay the eggs in the spring and thus keep up the life cycle. There are but few other birds present here in winter to perform this work, and these two birds also secure their food from places where no other birds present at that time of year would search for it. In this they form a well balanced couple, the Nuthatch securing his food from the rough bark of the main trunk while the Chickadee pecks away at

the small buds and joints, loose bark, etc., of the smaller, smooth limbs. In addition, it can be said in favor of both these birds that they are inclined to remain in one vicinity and do not wander far from it, but steadily and thoroughly work over one feeding ground.

Possibility and Desirableness of Partial Domestication.

Both these birds are very easily approached, and may readily be lured to orchards or shade trees,—they are quite common upon the shade trees of Lansing and, as stated before, are very tame on the campus.

It is, then, self-evident, that by every means they should be encouraged, by placing food for them till they become at home, by erecting suitable nesting sites, and by careful protection, to feed and nest in the orchards. It might be interesting to try the experiment of destroying as many old Woodpecker holes as possible and by placing suitable nesting sites in the orchard to thus entice them. Yet, in general, the old holes in which they nest should not be all cut out when securing fire wood, but a sufficient number be allowed to remain. If the farmer will take a very little time now and then in thus attracting these feathered insect-destroyers to his orchard, he will soon find very little if any need for insecticides except for extraordinary attacks. "An ounce of prevention is worth a pound of cure" is truly more applicable to the destruction of insect life than to almost any other phenomena.

Bulletin 54

June 1898

NEW HAMPSHIRE COLLEGE
AGRICULTURAL EXPERIMENT STATION

THE WINTER FOOD OF THE CHICKADEE



THE CHICKADEE OR BLACK-CAPPED TITMOUSE.

BY CLARENCE M. WEED

NEW HAMPSHIRE COLLEGE
OF
AGRICULTURE AND THE MECHANIC ARTS
DURHAM

NEW HAMPSHIRE COLLEGE
AGRICULTURAL EXPERIMENT STATION
DURHAM

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Bulletin 54—The Winter Food of the Chickadee. June.

The Bulletins of this Station are sent free to any resident of New Hampshire upon application.

THE WINTER FOOD OF THE CHICKADEE

BY CLARENCE M. WEED



FIG. 1. Eggs of Apple Aphis to Dr. L. O. Howard of the U. S. Department of Agriculture, for the determination of some of the food elements.

Throughout New England, the Chickadee, or Black Capped Tit-mouse, *Parus atricapillus*, is one of the most abundant winter birds. It is commonly distributed over a wide area, in which it may be seen day after day, busily searching the twigs and branches of trees and shrubs. In order to determine more definitely the economic status of the species, the writer recently undertook a study of its winter food, the results of which are recorded in this bulletin. In the investigations I have been indebted to Mr. Ned Dearborn for many specimens, and have been aided in various ways by my assistant, Mr. W. F. Fiske. I am also under obligations

The results as a whole show that more than half of the food of the chickadee during the winter months consists of insects, a very large proportion of these being taken in the form of eggs. About five per cent. of the stomach contents consisted of spiders or their eggs. Vegetation of various sorts made up a little less than a quarter of the food, two-thirds of which, however, consisted of buds and bud scales that were believed to have been accidentally introduced along with plant-lice eggs. These eggs made up more than one-fifth of the entire food, and formed the most remarkable element of the bill of fare. It seems to me evident that a large proportion of the bud scales are accidentally introduced into the stomachs of the birds, because most of the aphid eggs are taken from the crev-

ices beside the buds of deciduous trees and shrubs, and so it must commonly happen that bud scales are pecked away and swallowed with the eggs.

This destruction of the myriad eggs of plant-lice which infest fruit, shade, and forest trees is probably the most important service which the chickadee renders during its winter residence. As indicated in the record below, more than 450 eggs sometimes occur as the food of one bird in a single day. On the supposition that one hundred were eaten daily by each of a flock of ten chickadees, there would be destroyed 1,000 a day, or 100,000 during the days of winter, a number which I believe to be far below the real condition, could we determine it precisely.

The most remarkable fact regarding the life history of plant-lice is their power of multiplication. Each egg hatches in spring into what is known as a viviparous female aphid, that is, a form which gives birth to living young by a process similar to the method of reproduction in some of the lowest animals, known as budding. This process begins about two weeks after hatching, each aphid giving birth to a large number of young, that in turn soon become mature and give birth to others. Consequently multiplication goes on in a constantly

increasing geometrical ratio, that leads to the production of enormous numbers of the pests. Were it not for the numerous checks upon these insects found under natural conditions, they would overrun plants everywhere and render agriculture futile.

In the window-garden and the greenhouse, where these checks are not always at work, the aphides often destroy plants unless some artificial remedy is employed against them. Even on crops out of doors the injury due to their presence is frequently great, and were it not for the destruction of their eggs by chickadees and other enemies, there can be no doubt that the damage would be vastly greater.



FIG. 2. Plant-Lice Eggs on Twig of Birch. (These eggs are eaten by Chickadees.)

On those trees whose leaves drop off in autumn the eggs of plant-lice are commonly deposited in the crevices about the buds. The eggs of the common apple aphid are indicated as 'black specks about the buds in Fig. 1; those of an abundant species on birch are shown in Fig. 2; while Fig. 3 illustrates the eggs of a species that lays its eggs in great numbers upon the bark of willow branches. Although it is impossible to determine precisely the different species of plant-lice from their eggs, there was reason to believe that each of the species shown in these three figures had been eaten freely by the chickadees examined.

Insect eggs of many other kinds were found in the food of the chickadees. Many of these it was impossible to recognize, but there was no difficulty in identifying the eggs of the common American Tent Caterpillar,¹ the egg mass of which is illustrated in Fig. 4, and of the Fall Canker Worm,² the eggs of which as found upon elm are represented in Fig. 5. There were also present the eggs and egg sacs of many spiders of kinds commonly occurring under loose bark (Fig. 6). While spiders as a class are doubtless beneficial creatures, the destruction of some of them is not in my opinion seriously detrimental to the usefulness of the chickadee.

The larvæ of several different kinds of moths were also found. One of the most abundant species was believed to be the common apple worm, the larva of the codling moth (Fig. 7). It was difficult to be sure of the species, because the heads of the larvæ were nearly always absent, but there is little doubt



FIG. 3. Eggs of Plant-lice on Bark of Willow. (From a Photograph.)

¹ *Chisocampa Americana*.

² *Anisopteryx pomataria*.

as to its identity. Another larva commonly found was one which winters over on the twigs in a small silken case, as shown in the light spots in Fig. 8. The bark beetles of the family *Scolytidae*, which are destructive to forests all over our country, were also freely eaten by the chickadees. Some birds which had passed through the pine woods of the College farm were found to have eaten many of these beetles, the precise species being determined by Mr. E. A. Swarz of the United States Department of Agriculture, as *Pityogenes sparsus* Lec. So much of the time of these birds is spent in the woods that it is evident that they are of great benefit in destroying bark-beetles and other pests of forest trees.

The hairy skins of the fruit of the common wild sumachs were among the most abundant elements of the vegetable food present. The edible portion of these fruits is evidently eaten to a considerable extent throughout the winter.

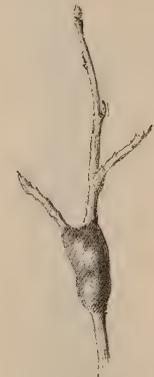


FIG. 4. Egg-mass of American Tent Caterpillar. (These eggs are eaten by Chickadees.)

THE RESULTS IN DETAIL

On the assumption that the scientific details of this study of the chickadee's food will not be of especial interest to the general reader, the following records are printed in smaller type, and may be passed over by any one who cares only for the general results.

But one specimen taken in November (the 12th) was studied. It had been killed after a tour through the tops of the pines in the College woods, and the stomach was chiefly filled with the fragments of small beetles belonging to the family of bark beetles (*Scolytidae*). These were estimated to form 85 per cent. of the entire contents. There were also five large eggs of an insect which were identified by

Dr. L. O. Howard as belonging to some species of the family *Reduviidae*, making 2 per cent.; three small larvæ, apparently of the order Diptera, 1 per cent.; fragments of sumach berries, 2 per cent., and undetermined material, 10 per cent.

The next specimen was taken December 9th in an apple tree, it having previously been followed through a mixed growth of young pines, maple, willow, and birches. The stomach was nearly full of the eggs of aphides, 429 of these being counted in the mass; they were estimated to form 70 per cent. of the stomach contents. There were also present a small moth, 4 per cent.; a Carabid beetle, 5 per cent.; a snout beetle, 4 per cent.; two insect larvæ, 4 per cent.; an egg of the fall canker worm, 1 per cent.; feathers a trace, and undetermined material, 1 per cent.

The first specimens collected in January were taken on the 19th at 2 p. m., and consisted of four birds which had just passed through a young growth of grey birches, apple and maple trees growing in a neglected pasture. Three of these had eaten largely of vegetable matter which was doubtfully identified as the buds of some small plant; this material constituted 70 per cent. in two of the specimens and 75 per cent. in the third. The first bird had eaten in addition the following: Three insect larvæ, 1 per cent.; about 45 insect eggs, 5 per cent.; undetermined



FIG. 5. Eggs of Fall Canker Worm on Elm Twig. (Chickadees feed freely on these Eggs.)

material, 2 per cent.; small seeds, 6 per cent.; undetermined material, 8 per cent. The second specimen had a somewhat similar record, except that 6 per cent. of aphid eggs had been eaten. The third had eaten a large geometrid larva, forming 5 per cent. of the food. The fourth chickadee of this lot had partaken of a somewhat different food from the other three. The principal item in its bill of fare consisted of material which was believed to be the skins of apples hanging from the trees, making 40 per cent. of the total food; plant-lice eggs formed 6 per cent.; eggs of fall canker worm, 4 per cent.; a lepidopterous larva, 10 per cent.; a large bud of a deciduous tree or shrub, 8 per cent.; small buds, 6 per cent.; and material not determined, 26 per cent.

Two chickadees were taken in Durham among some grey birches on the banks of the Oyster River at 10 A. M., February 14th. Both had

eaten largely of the small bud-like materials already noted, making 58 per cent. of the food in one and 37 per cent. in the other case. The other food elements of the first were aphid eggs, 24 per cent.; undetermined insects or their allies, 4 per cent., and undetermined material, 14 per cent. The stomach of the second specimen contained very little food,



FIG. 6. Egg-sacs of Spiders on loose bark.

Prasocuris varipes. (Fig. 9.) The other food elements were certain small round bodies of unknown origin, eggs of insects, bud scales, and seeds of birch.

Another chickadee feeding in an apple tree February 17th had eaten 60 per cent. of the skins of sumach berries, 28 per cent. of aphid eggs, 3 per cent. of the eggs of bugs of the family *Reduviidae*, and 2 per cent. of bud scales, while 7 per cent. was not determined. Still another killed on the same day in a clump of small pine trees had taken aphid eggs 19 per cent., bud scales 49 per cent., feathers 1 per cent., a spider, 2 per cent., and undetermined material 29 per cent.

Three chickadees were shot in an apple orchard February 19th, at 3:30 p. m. Their food was estimated as follows:



FIG. 7. The Codling Moth.

a caterpillar making 33 per cent., undetermined insects 8 per cent., grit 5 per cent., spiders 4 per cent., and undetermined material 13 per cent.

Four chickadees taken February 17th while feeding in a mixed growth of birch and pine had eaten chiefly aphid eggs, these constituting 62 per cent. of the entire food of the first specimen, 52 of the second, 46 of the third, and 61 of the fourth. In addition, one bird had eaten the eggs of the common American tent caterpillar to the extent of 16 per cent., and another had eaten a few specimens of a small flea beetle known to science as

No. 1. Eggs of aphids, .05; cocoon and larvæ of codling moth (?), .15; spider eggs and egg sac, .28; undetermined insects, .11; undetermined vegetable matter, .18; undetermined animal matter, .22; grit, .01.

No. 2. Five codling moth larvæ (?), .67; cocoon of codling moth (?), .07; eggs of aphids, .12; small beetle (*Hoplocephala bicornis?*), .01; eggs of insect, .01; eggs of spiders, .01; spider, .02; buds, .05; undetermined material, .04; feathers, trace.

No. 3. Eggs of aphids, .52; lepidopterous larvæ, .28; two spiders and web, .10; bud scales, .03; undetermined, .07.

The next specimen was killed at 3 p. m. February 18th while picking at a small twig of a birch tree. It had evidently been eating the eggs of the plant-lice that are so abundant beside the buds of the birch, as 74 per cent. of the food consisted of aphid eggs, of which two sizes were present;—the smaller were probably those of the birch species. In addition there was a caterpillar, making 4 per cent.; small cocoons apparently of hymenopterous insects, 2 per cent.; bud scales, 9 per cent.; undetermined insects, 2 per cent.; and other material, 9 per cent.

Another chickadee taken at the same time in a similar situation contained 52 per cent. of aphid eggs and various other materials.

Two chickadees were taken at 4 p. m. February 26th at Durham Point in a mixed growth of pines and birches. One of these had eaten 454 eggs of aphides, making 44 per cent. of the food, and an equal percentage of material that seemed to be the dried castings from the old nests of tent caterpillars. In addition there were feathers, spiders' eggs, canker worm eggs, and woody matter, each estimated at 1 per cent., as well as 8 per cent. of undetermined material. The other bird contained the following: A good-sized fly, 11 per cent.; nine spiders—one large, one medium, seven small—24 per cent.; two spider egg-sacs, 10 per cent.; canker worm eggs, 2 per cent.; a measuring worm (*Geometridæ*), 22 per cent.; feathers, 1 per cent.; and undetermined material, 30 per cent.

Three chickadees were shot on March 4th at about 11:30 a. m. They belonged to a large flock which had been flying from tree to tree through the woods. The first had eaten 42 per cent. of aphid eggs, 18 per cent. of buds and bud scales, 9 per cent. spider and web, 2 per cent. of beetles, 6 per cent. of sumach fruits, 2 per cent. of oval brown insect eggs, and 21 per cent. was undetermined. The second specimen had eaten a large spider making 37 per cent. of the whole, and some spider's web making 7 per cent. more; leaf-hoppers of the family *Fassida*, 4 per cent.; eggs of fall canker worm, 4 per cent.;



FIG. 8.—Winter cases of a small caterpillar beside apple buds. (They show as light spots.)



FIG. 9—Flea beetle magnified (Eaten by chickadee.)

a moth and pupa, 12 per cent.; the winter cases of a tineid, 3 per cent.; sumach berries 7, and undetermined material, 26 per cent. The third specimen was remarkable for the number of insect eggs which it had eaten. There were 121 good-sized eggs of aphides and 147 small eggs of aphides, the two together making 52 per cent. of the total food; in addition there were 20 reduviid eggs, making 9 per cent.; 15 round black and white eggs with a reticulate surface, 9 per cent.; and 15 oval, pointed, white eggs, making 5 per cent. Spiders and their cases made 6 per cent.; a lepidopterous larva, 3 per cent.; a beetle larva, 4 per cent.; a lepidopterous and hymenopterous cocoon, 1 per cent. each; five small larvæ, probably dipterous, 5 per cent.; bud scales, 1 per cent., and undetermined material, 4 per cent.



FIG. 10.—Nightflying moth (*Scopelosoma*). Eaten by chickadees

The next specimens studied were three birds taken at 1 p. m. March 4th, in small trees in a pasture. They had been feeding leisurely in trees or shrubs of birch, apple, alder, cedar, and barberry. Two of these had eaten many plant-like eggs, and many other insects, while a third had eaten a variety of insects.

A chickadee taken about 2 p. m. March 4th in a small lot of pine in a pasture contained the following: Pupa of a lepidopterous insect, 11 per cent.; a lepidopterous larva, 16 per cent.; a spider, 10 per cent.; small hymenopterous cocoons, 24 per cent.; bud scales, 6 per cent.; sumach fruits, 8 per cent., and 25 per cent. was undetermined. About an hour later another bird was shot in a growth of hemlocks. "The circumstances," according to Mr. Fiske's notes, "were quite peculiar, the bird having flown to the ground and being in the act of picking at a piece of dead bark which had fallen from a tree. It was killed instantly, and when picked up had scarcely moved, except to open its wings a little. It had been picking at a nest of spiders' eggs, and the bill was still full of eggs, and in almost the precise position which the bird had assumed in the act of eating." The food record of this specimen was not, however, a very full one: In addition to the spider eggs the bird had swallowed there were aphid eggs 1 per cent.; bud scales, 32 per cent.; sumach fruits, 8 per cent., and 45 per cent. could not be determined.

About 4:30 p. m. March 4th, five chickadees were taken in an open pasture in which were many scattered trees. The birds were busily feeding, and had been noticed on apple, barberry, poplar, hemlock, elm, willow, birch, beech, and oak. The food contents are indicated in the following summaries:

No. 1. Pieces of sumach fruit, .46; eggs of aphides, .11; an insect larva, .21; spider's web, .08; eggs of insects, .04; feather, .01; undetermined arthropods, .04; undetermined material, .05.

No. 2. Stomach very full; aphid eggs, .23; spider eggs and egg-sac, .06; leaf-hopper (*Fassidea*), .03; insect eggs, .05 (1 per cent. of them thought to be those of the forest tent caterpillar *Clisiocampa*

disstria); adult flies (Diptera), .06; puparia of flies, .09; lepidopterous pupæ, .05; insects undetermined, .27; seed of Polygonaceæ, .02; bud scales .01; undetermined material, .13.

No. 3. Stomach full. Eggs of aphides, .35; spider eggs and web, .22; larvæ, believed to be those of the codling moth, .12; other lepidopterous larvæ, .06; undetermined insects, .09; insect larvæ, .03; spider, .04; bud scales, .03; undetermined material, .06.

No. 4. Eggs of American tent caterpillar (*Clisiocampa Americana*), .06; spider, .16; cocoon of spider, .11; aphid eggs, .04; eggs of fall canker worm, .02; beetles, .03; sumach fruits, .44; bud scales, .08; undetermined material, .06.

No. 5. A large noctuid larva, .44; insect eggs (*Reduviidæ?*), 19; aphid eggs, .06; insect larvæ, .08; sumach fruits, .07; bud scales, .06; undetermined material, .10.

The next specimen was taken March 11 at 10:30 a. m. in a growth of birch. It contained: aphid eggs, .24; geometrid larva, .12; beetles, .09; hymenopterous cocoons, .12; spiders and their web, .09; lichens, .05; bud scales, .11; and undetermined material, .18.

On March 26th a chickadee was shot at 8:30 a. m. It was one of a flock that was apparently emerging for the first time that day from a small grove thickly set with pine trees. There was very little food in the stomach, all of which appeared to be undigested material from the food of the day before. The only recognizable elements were bud scales, spider's silk and pieces of the legs of insects and spiders.

On March 26th, five chickadees were shot in a sugar orchard, and in apple trees near by. One of them had in its bill when killed the abdomen and part of the wings of the moth represented natural size in Fig. 10 and known to entomologists as *Scopelosoma indiracta*.

The food contents of these specimens were as follows:

No. 1.—Moth, .90 (*Scopelosoma*); eggs, probably from the abdomen of moth, .02; aphid eggs, .02; cocoon of spider, .03; undetermined, .03.

No. 2.—Moth, .27; beetles, .12; spiders, .14; small white egg of an insect, .01; small hymenopterous insect, .01; bark, .12; undetermined vegetable tissue, .26; feathers, .01; undetermined material, .06.

No. 3.—Noctuid moth, .61; bug (*Reduviidæ*), .03; spider, .16; web of spider, .04; undetermined arthropods, .12; undetermined vegetable matter, .04.

No. 4.—Three insect larvæ, probably lepidopterous, .28; small beetles, .05; bark-lice (*Coccidæ*), apparently oyster-shell bark-louse (*Mytilaspis pomorum*), .01; aphid eggs, .01; spider, .06; bud scales, .23; bark, .14; undetermined vegetable matter, .22.

No. 5.—Two lepidopterous larvæ, .38; lepidopterous pupa, .32; dipterous larvæ, .14; undetermined adult arthropods, .08; lichen, .01; bud scales, .02; undetermined vegetable matter, .03; feather, .02.

The last specimens of the winter were taken by Mr. Dearborn at 11.00 a. m. on March 29th. They were feeding near the ends of high branches of a large chestnut tree at Northfield, Merrimack Co., New Hampshire. Apparently comparatively little food had been taken that morning, the stomach of the first specimen containing 44 per cent. of bud scales, probably largely left over from the day before, and 30 per

cent. of undetermined vegetable matter. In addition there were 9 per cent. of aphid eggs, an equal ratio of adult insects, and 8 per cent. of insect larvæ. The second had eaten even less that morning, there being only a few skins of aphid eggs, and the rest of the material consisting of bud scales and undetermined vegetable matter.

TABLE I.—FOOD OF THE CHICKADEE.

Months.	Nov.		Dec.		Jan.		Feb.		March.		Summary.	
	No. of specimens each.		1		1		4		15			20
KINDS OF FOOD.	No. of spec.	Per cent. of whole.	No. of spec.	Per cent. of whole.	No. of spec.	Per cent. of whole.	No. of spec.	Per cent. of whole.	No. of spec.	Per cent. of whole.	No. of spec.	Per cent. of whole.
	Arthropoda (undetermined)
Insecta
Insect eggs
Insect larvæ
Coleoptera
Scolytidæ
Carabidæ
Tenebrionidæ
Chrysomelidæ
Curculionidæ
Larvæ
Lepidoptera (undeterm'd)
Eggs
<i>Antiopteryx pomataria</i>
<i>Clistocampa</i>
Larvæ (undetermined)
<i>Carpocapsa pomonella</i>
Pupæ (undetermined)
Diptera
Larvæ
Pupariæ
Hemiptera (undeterm'd)
Jassidæ
Coccidæ
Eggs (Reduviidæ)
(Aphididæ)
Hymenoptera
Cocoons
Spiders
Eggs
Vegetable matter (undetermined)
Buds and bud scales
Sumach fruit
Seeds
Lichens
Insect excrement (?)
Spiders' silk
Undetermined
SUMMARY.												
Insecta
Arachnida
Vegetable matter
Extraneous
Undetermined matter

ABUNDANCE AND FEEDING HABITS

In order to get some idea of the abundance of chickadees in a region like south-eastern New Hampshire, where a considerable portion of the land is wooded, I requested Mr. Fiske to spend a day in the woods and fields, recording the number of flocks of chickadees seen, the approximate size of each flock, and observing their feeding habits. He has summarized his observations in the following paragraphs:

"In the course of the day, a distance of about seven miles was traversed, without taking into account the many minor deviations in the route; four square miles would seem a reasonable estimate of the area covered. Eleven flocks of chickadees were seen, varying in numbers from four to forty, but averaging about thirteen in each flock. Estimating the amount of territory covered at four square miles, this would place the number of birds for each square mile at thirty-five, which certainly seems a reasonable estimate.

"During the forenoon, the birds were not very busy feeding, and all the flocks encountered were traveling through the woods at a rate somewhat faster than was pleasant to follow on foot, each bird stopping for an instant at any especially tempting tree or dead stub, and then hastening on to join its companions. In the afternoon, especially toward evening, the birds encountered seemed to be attending much more closely to feeding. Instead of traveling across country, the flock would scatter over a section of woodland or pasture, each bird searching closely the crevices in trees, stumps, and fences. A peculiar habit which I had not before noticed is worthy of mention: when one of the chickadees wished to investigate some crevice or bunch of lichen where it could not obtain a foothold, it would hover before it a moment in the air, as a humming-bird hovers before a flower.

"These remarks apply to a day in early March, which, while not sunny, was still fairly warm and quiet. During the darker days of January and February, when the snow lies deep and the wind is often cold and sharp, the daily life of the chickadee is quite different. Several trips into the field for material for study were made in February, and the birds

were then confined more closely to the evergreen woods and other situations equally sheltered, seldom venturing out into open pastures and fields. In the College woods, which are largely composed of tall pines, there was almost always a flock to be found by very little searching, flying from tree to tree far up in the tops, and scrutinizing closely each mossy limb, or alighting on the terminal twigs and picking something out of the leaf clusters. They did not confine themselves to the tall growth by any means, but, in a little clump of trees, very similar to that represented in Figure 11, there was a colony to be found at almost any time during the latter half of February."

ENCOURAGING THE PRESENCE OF CHICKADEES

Fortunately, these useful birds are easily induced to remain upon the premises, where their services, in destroying the insect enemies of orchards, vineyards, and other plantations, will abundantly repay the slight trouble necessary to lead them into a condition of semi-domestication. It has been repeatedly observed by bird lovers in many parts of the Northern states that the chickadees are common in city parks, and about premises in which there are evergreens in which they may find shelter during the storms of winter. Numbers of observers have found that by placing bones with a little meat attached to them in a tree, the chickadees and other winter birds are attracted to it, while in one instance the birds became so tame that they would alight on the person who was studying their habits. Mr. Fiske has had abundant opportunity to study this phase of the subject upon his father's farm in Webster, New Hampshire, and furnishes the following summary of his observations:

"Chickadees may readily be taught to come around the house, if fed regularly, and a flock of them thus partially tamed may be the source of much amusement to one having a liking for birds. They are fond of almost any food of an animal nature, especially if it contain more or less fat; they will also eat farinaceous food to a certain extent, being quite partial to bits of brown bread. If supplied with a surplus of food in the shape of small fragments, they will, after eating all that

they can, carry away large quantities and tuck it away in crevices in the bark, or at the base of twigs, in some neighboring tree. If the wood-pile is handy, it affords numerous opportunities for this purpose, and is freely used. This habit of stor-



FIG. 11. A Refuge for Birds.

ing food is of great benefit to the blue jays, who, if the food is displayed on a window-shelf, or some similar situation, dare not get it for themselves, but will hang around until it is stored away by the chickadees, when they will steal the morsels from their hiding places."

The protection which a pine grove affords to chickadees and other winter birds is one reason why it is desirable to have such a bit of woodland on or near the farm. It also serves as a shelter to many other birds during the summer season.

A remarkable example of the benefit that may be derived from the presence of a flock of chickadees, has been recorded by Mr. E. H. Forbush, in a bulletin of the Massachusetts State Board of Agriculture. In a certain orchard in Massachusetts, canker-worms had been abundant the previous season, and the moths of the fall canker-worm had deposited great numbers of eggs upon the trees. Pieces of meat, bone, or suet were fastened to the trees early in the winter, to attract the chickadees.

The birds came, and remained about the orchard nearly all winter. They were carefully watched, it being found that they were feeding on the eggs of the canker-worm moth. A few birds were killed, to determine the number of eggs eaten. Between 200 and 300 canker-worm eggs were found in the stomach of each of these birds. In the spring, the female moths of the spring canker-worm were also devoured by these birds. The result was that the chickadees, assisted in spring and early summer by various other birds, saved the orchard from any serious injury by the canker-worms.

CONCLUSION

The investigations recorded in this Bulletin, show that the chickadee is one of the best of the farmer's friends, working throughout the winter to subdue the insect enemies of the farm, orchard, and garden. For the efficient service thus rendered the bird asks no pay, although it may be induced to remain more of the time upon the farm premises, if bones or suet are hung in trees where the birds may get it during winter.

Parus hudsonicus

1889 Mass.

Oct. 18 Arlington. - Two specimens found by Faxon in white pine woods near the Winchester line. He shot one on the 19th and gave me the specimen, a ♀ in full autumnal plumage. The other remained in the same place as late as the 22nd Oct.

Nov. 17 Waverley. - One seen by Faxon in white pine woods near the Convalescent Home.

[Ashby - Dec. 11-14. - We searched for it in vain in the Spruce forests on Mt. Watatic and in the pine woods near the town]

Dec. 15-16 Mt Graylock. - One seen on the 15th in pasture spruces on the mountain side behind Baban Wilbur's in the Notch at an elevation of about 2200 ft.

On the 16th I found three together in these spruces and shot two, a ♂ & ♀. On both occasions there was a flock of *P. atricapillus* within hearing but the *P. hudsonicus* did not seem to be actually associating with them. I heard two notes from *hudsonicus* the usual chip, chee-dee, dee and a light, almost silvery and very musical ti-e-i-i-i-i identical, as far as I could see, with that of *P. atricapillus*. I observed that *P. hudsonicus* fed much less at the tips of the branches than *P. atricapillus* but rather seemed to affect the interior of the spruces. This habit was so marked in the bird seen on the 15th that although we followed it for some distance we did not once see it perch upon it invariably plunged at once into the very middle of the spruce branches before alighting.

Notes

Dec. 19

Faxon found a flock in the Mountaineer Pasture. He could not count them but thought there were 12 to 15. They were in pasture spruces

Parus hudsonicus

1890 Mass.

Jan'y 1 Wareley. One seen by Faxon in the same place as on Nov. 17/89 Wintering at Wareley, Mass.
and doubtless the same bird
" 5 " The same bird seen in same place (Faxon).
" Faxon tells me to-day (Jan. 13) that he has found this bird several times since the 5th, always with black cap chickadees. On one occasion he followed the flock all day, It ranged through the pines out into an apple orchard (on the lower plain west of the waterfall) and back through the Wareley & oak grove calls the *P. hudsonicus* following its companions the entire distance

" 26 Seen in the same place, this evening, by Faxon. No other birds with him. F's dogs Memmy about started him up.

Feb 7 "My Hudsonian Titmouse again in the same place to-day. Have seen him there off and on since Nov. 17th. Pretty good evidence, this, that birds have as restricted a beat in winter as they do in summer. It takes the dogs to stir this little fellow up". (Mr. Faxon's letter Feb. 11-1890)

New Hampshire

" 15 Seabrook. - "I killed a Hudson Bay Titmouse yesterday I believe they are rare here or at least uncommon" (Alvah A. Eaton letter Feb. 16-1890)

1892 Mass.

Oct 21 Carlisle. - One heard distinctly many times, among pitch pines, In pitch pines with
and birches. On going to the spot I found a large flock of *P. atricapillus* but did not catch sight of the *P. atricapillus*
hudsonicus which had become silent. I was in too great a hurry to spend much time in the quest.

Massachusetts.

Parus hudsonicus.

1892.

Oct. 21 Carver's. Near the Carlisle graveyard in a mixed growth of birches and pitch pines I heard the unmistakable chick, chee-lee-lee of *Parus hudsonicus* repeated fifteen or twenty times very near me but all my efforts to get a sight at the bird failed. It was with a small flock of *Parus atricapillus* which came close about me when I "screamed" & whistled but the Hudsonian kept a little aloof and concealed among the foliage of the pines although he whished around me in a circle uttering his call excitedly when I screamed. When I started after him he became silent. With more time I could of course have found him but my companions were waiting for me.

Parus hudsonicus.

Concord, Mass.

1896. After dining at the cabin Will Bartlett and I walked out
Oct. 31. over the old cart-path to Birch Island. We were standing by
the boat landing there looking for Grebes when suddenly the
emphatic chip, chu-deè, deè of a Hudson's Bay Titmouse rang
out on the still air directly behind us, and was immediately
repeated. Turning and looking upward we saw the bird swaying
on the topmost twig of a birch within twenty yards or less.
It was quite alone and, indeed, there were no other birds of
any kind at the time on this small and scantily-wooded meadow
island. Probably it had only just come across the meadows
and had alighted merely to rest for a moment for I had only
just time to tell Bartlett what it was when it started again
and made off over the river heading at first for the Bedford
shore but finally turning to the right and disappearing among
the pines on Davis's Hill. We followed it to where we had seen
a mixed flock a short time before but it had not joined them.
I fancy that he kept straight on through or past them as, indeed
he must have done through or near many a similar flock since
leaving his home in the North. His course during the short
time we had him in sight was due south and he was probably
actually migrating at the time.

Dwight, Summer Birds of
Prince Edward Island.

Parus hudsonicus. HUDSONIAN CHICKADEE.—Tolerably common, but not attracting attention to itself so aggressively as does *atricapillus*. However, when it does speak out, it always seems to me to make use of the ungrammatical expression 'It's mé-e,' with a good deal of emphasis on the 'me-e.'

Auk X, Jan, 1893, p.14

Summer Birds of Bras D'Or Region
Cape Breton Id., N.S. J. Dwight, Jr.

Parus

56. *P. hudsonicus*.

Auk, 4, Jan., 1887, p.16

Birds of Upper St. John,
Batchelder.

8. *Parus hudsonicus* Forst. HUDSONIAN CHICKADEE.—About half a dozen were seen at Grand Falls, mostly in hardwood brush or small woods. It was not seen at Fort Fairfield.

Bull. N. O. C., 7, April, 1882, p.109

Birds within Ten Miles of Point
de Monts, Can., Comeau & Merriam

7. *Parus hudsonicus*. HUDSONIAN CHICKADEE.—A common resident, like the last.

Bull. N. O. C., 7, Oct, 1882, p.28

Summer Bds. Restigouche Valley, N. B.
July, '88. J. Brittain and P. Cox, Jr.

Parus hudsonicus. HUDSONIAN CHICKADEE.—Not uncommon.

Auk, VI. April, 1889, p.119

An Ornithologist's Summer in Labrador
M. Abbott Frazer.

Parus hudsonicus, Hudsonian Chickadee. While at Esquimaux Point in the spring, I saw but two individuals, and observed none others until my return in September, when they were migrating in abundance along with the Labrador Jays. Never before had I seen them in flocks of over a dozen or fifteen, but now they passed in fifties and hundreds, and the two mornings that I was out I must have seen as many as twenty such bunches.

O. & O. XII, Mar. 1887, p.37.

Some Winter Birds of Nova Scotia. By O. H. Morrell.

31. *Parus hudsonicus*. HUDSONIAN CHICKADEE.—Abundant. Often seen accompanying the preceding. They are readily distinguished from *P. atricapillus* by their note alone. Auk, XVI, July, 1899, p. 253.

Notes on the birds of Cape Breton Island.
by Charles M. Townsend, M. D.

Parus hudsonicus. HUDSONIAN CHICKADEE.— It is as easy to distinguish this bird by its notes from the familiar Black-capped Chickadee, as by its plumage. There are, however, very few descriptions in the books of these characteristic notes, and I can find no account of a song. Both Chickadees have a variety of faint notes that are very much alike, but there is one characteristic in most of the notes of the Hudsonian which at once distinguishes it from the Black-cap, and that is the *z* quality, delivered in a lower pitch. In a word, the Hudsonian uses *z* while the Black-cap uses *s* or *d*. The former says *pst zee-zee* or less often *pst zee-zee-zee*, while the latter repeats more frequently, and rattles off, *psit a dee-dee-dee-dee-dee*, and his notes are higher pitched.

Several times in different places I was treated to a pleasant little warble from the Hudsonian Chickadee, which appeared to my companion and myself to easily merit the name of song. It was a low, bubbling, warbling song, which I vainly attempted to describe in my notes. It began with a *psit* or *tee*, followed by a sweet but short warble. This song, if song it be, is quite different from the irregular rolling notes that the Black-cap occasionally emits, which cannot be considered a song. In one case I noted that the song was emitted by an adult. I heard the song several times from one bird at Englishtown, several times from another at Indian Brook, once at Skir Dhu, and once at North Ingonish. It is evident therefore that it was not the idiosyncrasy of one bird. While it would seem strange that the Hudsonian Chickadee should not have a song, it is stranger still that those who are familiar with the bird at all seasons should not have heard it, if it exists. As far as I know the only allusion to a song in this species is by Mr. Horace W. Wright

in the Auk, Vol. XXII, 1905, p. 87, in which he refers to a Hudsonian Chickadee seen at Ipswich, Mass., on November 12, 1904, as follows: "[he] was very finely seen while he gave a sweet warbling song." Of another bird, seen on November 25, he says: "The Belmont bird was also well seen and gave a few notes of the warbling song."

Auk, XXII, Apr., 1906, p. 172-179.

Birds of Toronto, Canada,
by James A. Fleming
Part 14, Land Birds.
Auk, x xiv, Jan. 1907, p. 86.

280. **Parus hudsonicus.** HUDSONIAN CHICKADEE.— One record, Richmond Hill (13 miles north of Toronto), about 1890.

Hudsonian Chickadees at Hatley, Stanstead County, Quebec.—

On October 10, 1916, I came across two examples of the Hudsonian Chickadee (*Penthestes hudsonicus* subsp.?) in the same wood as the pair recorded in 'The Auk,' Vol. 33, 1916, p. 184; and they remained there until November 12. Between these dates I saw them on ten occasions, and generally they were in the company with a few *P. atricapillus* but it was quite an easy matter to locate them from the latter by their notes alone, without seeing them, and this I often did following up the sound until a view of the birds was obtained and identification confirmed.— H. MOUSLEY, *Hatley, Que.*

Auk XXXIV, Apr. 1917, p. 2157

Labrador Chickadees at Hatley, Stanstead County, Quebec.—

It is with pleasure that I record a visit of Dr. Townsend's new subspecies the Labrador Chickadee (*Penthestes hudsonicus nigricans*) to Hatley, on its return journey to its breeding grounds. The birds were first observed on May 14 and between that date and the thirtieth on which the last was seen, seven examples were secured, three being sent to Dr. Townsend, and the other four to the Victoria Memorial Museum at Ottawa. The former consisted of two adult males and one female, the latter of two males and two females. They were generally alone or in the company of Golden- or Ruby-crowned Kinglets, and were somewhat shy and difficult to approach, which made their exact number not easy to estimate. Besides the seven obtained I can only positively assert to having seen four other examples, although I know there were several more that I was unable to follow up.— H. MOUSLEY, *Hatley, Que.*

Auk, Vol. XXIV, Oct. 1917, p. 486-487.

Labrador and Acadian Chickadees at Hatley, Stanstead County, Quebec.—

On the early and no doubt record date of September 3, two examples of the Labrador Chickadee (*Penthestes hudsonicus nigricans*) were obtained and three others noted between then and the twenty-first, whilst on October 11 two examples of the Acadian (*Penthestes hudsonicus littoralis*) were seen at close quarters and easily identified from the former, not so much from the fact of their backs being brown instead of dusky, the caps undifferentiated, and the sides of a strong brown tint, but more from their behavior and the tone of their voice, which was entirely different to that of the sixteen *nigricans* I have so far come across. The same wheezy note was certainly there, but it was stronger and more insistent than in *nigricans*, which has a very feeble wheeze. As regards their behavior they came close down to me of their own accord and when whistled, the same as *atricapillus* will, a thing I have never known *nigricans* to do, in fact it has always been a matter of much difficulty to get a shot at these latter owing to their restless and nervous state.— H. MOUSLEY, *Hatley, Que.*

Auk, XXXV, Jan. 1918, p. 83.

Penthestes hudsonicus at Portland, Maine.—*Penthestes hudsonicus*, which did not come under the writer's observation at Portland during his collecting days, has twice made known to him its presence there since. On April 27, 1913, I watched a bird for three quarters of an hour as it moved about in trees and bushes at the west end of Portland,—alone most of the time but occasionally joined by a small party of Black-capped Chickadees (*P. atricapillus atricapillus*) which chanced to be in the neighborhood. Another bird passed much of the afternoon of October 27, 1913, near my house on Vaughan Street, Portland, and was identified only by its frequent call-notes. Since no specimens of *P. hudsonicus* are in existence from Portland or its vicinity, so far as I am aware, it seems best at present not to express an opinion as to the subspecies which was represented by these birds.—NATHAN CLIFFORD BROWN, Portland, Maine.

Auk. XXXIX, Apr. 1917, p. 215.

10. *Parus hudsonicus*, (Hudsonian Chickadee).
A small flock seen in January, 1884, from which I secured three. They came about the lumber camps, to the shelter of the hay shed, during a snow storm.

O. & O. XI. Aug. 1886. p. 115

Breeding of the Hudsonian Chickadee (*Parus hudsonicus*) at Dover, Me.—There has been so little said or written in relation to the breeding of this species that the record of a nest with young discovered by the writer the present season may be of some value to the working ornithologists.

During a 12 years' residence at Dover, Piscataquis County, I have occasionally during my rambles met this species, but the meetings have usually occurred during the late fall or winter seasons, and have been so infrequent as to merit a special record in my notes. Accordingly it was indeed a surprise to discover a pair engaged in the act of rearing a brood of young this season. The date was June 21. I had spent the morning botanizing in a place locally known as Sangerville bog, located due west from Dover village, the nearest portion of the bog being about a mile distant. The boundary line between the towns of Dover and Sangerville passes directly through the morass, a portion lying in either town, but the 'find' was located on the Dover side.

suspect a brood or nestings might be near. Both birds were seen and positively identified through my glass at a distance of about 30 feet before the nest was discovered. While I was examining the nest, the bird with the moth in its bill, presumably the female, as she was the most fearless of the pair, flew to within seven or eight feet of my head and nearly on a level with it, showing the greatest anxiety and uttering piteous cries. Her call notes before I approached the nest were similar to the following syllables, *tswee-chee ya-a-a-ck* (emphasis on last syllable and with rising inflection) and were uttered at intervals of five or six seconds quite constantly. The male was not apparently as anxious as his mate, nor did I hear any note from him during my stay in the vicinity of near a half hour.

I could not remain longer to study this interesting family, and after carefully marking the spot, returned home intending to return and secure material proof of the bird's identity, but business detained me and I was not able to again visit the place until July 1, an absence of ten days, when I found the nest empty. From its appearance I had no doubt that the young brood had occupied it until within a day or so, and expected to find them near, but a search of the surrounding territory failed to discover any trace of them.

The stub containing the nest was secured and the nest-lining examined, which proved to consist mainly of vegetable down from ferns and what

Birds of Dead River Region, Me. F. H. C.

10. *Parus hudsonicus*, (Hudsonian Chickadee).
A small flock seen in January, 1884, from which
I secured three. They came about the lumber
camps, to the shelter of the hay shed, during a
snow storm.

O. & O. XI, Aug. 1886, p. 115

This bog is of the character of many others scattered throughout northern and central Maine, lying in a valley surrounded by hills of moderate height, the slopes of which are well wooded, principally with beech, birch and poplar. The swampy margin of the bog produces a belt of fir and cedar with a fair percentage of yellow birch and swamp maple, while the center of the bog consists of open areas interspersed with clumps of the hackmatack, locally known as juniper.

The nest was located in the coniferous belt at the extreme edge of the swamp, about six rods from an opening where the growth had been cut away and is now occupied as pasture. A portion of a dead cedar, nine inches in diameter and about ten feet in length, had fallen and stood leaning with a gentle incline against a birch, and in this stub about four feet from the ground the nest was located. The birds had done apparently but little excavating in solid wood; taking advantage of a decayed place in the side of the stub, had there begun their building operations. The opening at the entrance was irregular in shape, measuring about two by three inches, the cavity expanding with the descent until a depth of six inches was reached where the inside diameter was about four inches, and there the nest was placed. It contained six young birds, well covered with dark feathers, which were probably about a week out of the shell, and they filled the nest so completely it was a question how they would all be able to exist and reach maturity in these narrow quarters.

The old birds were engaged in feeding the young, and the fact of one having a woodlouse moth — species unknown — in its bill first led me to suspect a brood of nestlings might be near. Both birds were seen and positively identified through my glass at a distance of about 30 feet before the nest was discovered. While I was examining the nest, the bird with the moth in its bill, presumably the female, as she was the most fearless of the pair, flew to within seven or eight feet of my head and nearly on a level with it, showing the greatest anxiety and uttering piteous cries. Her call notes before I approached the nest were similar to the following syllables, *tswee-chee ya-a-ck* (emphasis on last syllable and with rising inflection) and were uttered at intervals of five or six seconds quite constantly. The male was not apparently as anxious as his mate, nor did I hear any note from him during my stay in the vicinity of near a half hour.

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O. & O. XI. Aug. 1886. p. 115

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General Notes.

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appeared to be the fur of the northern hare or rabbit nicely felted together.

This record of *Parus hudsonicus* would appear to indicate a later season for nesting than that occupied by *P. atricapillus*, as I discovered a flock of the latter containing both the old and young birds, several days from the nest, feeding only a few rods from the spot where, snug in their tree, lay concealed the brood of young *hudsonicus* which appeared to be only about a week out of the shell. Accordingly *atricapillus* must have been out in the world quite ten days before *hudsonicus* would leave its nest.

During my rambles in this vicinity in the months of September and October, I found *hudsonicus* to be more abundant than during previous years, and on at least one occasion a flock containing five or six individuals was seen. May we not hope that this occasional resident bird is becoming more abundant within our borders, and that the observations of future seasons may prove it to be a permanent though rare species.—
SANFORD RITCHIE, Dover, Me. *Auk*, XXII, Jan., 1905, p. 85-87.

Mt. Washington, N. H.

Parus hudsonicus 11.

1884

July 11-12 During an ascent of the mountain on the 11th I shot an adult ♂ in a fir thicket by the carriage road about a mile below the Half-way House. It was in company with four or five *Parus atricapillus* but with no others of its own species. The following morning another was heard about opposite the Half-way House but perhaps two hundred feet higher.

July 26 Two adults, mouthing and in very ragged plumage, shot opposite the Half-way House. They were with a family of *S. striata*.

Randolph, N. H.

Parus hudsonicus 12.

1884

July 27. Shot two among thickly growing young Spruces in a pasture behind the Crescent House (the elevation by aneroid is 1650 ft.). They were in company with *P. atricapillus*. Both were adults, mouthing, and so ragged as to be worthless for specimens.

Winter Birds of Webster, N. H. by Falco.

Hudsonian Chickadee, (*Parus hudsonicus*). One shot Nov. 1875, and two seen Nov. 1878.

O. & O. X. Jan. 1885. p. 14

16

**Summer Birds of Presidential Range,
White Mts. A.P., Chadbourne**

42. *Parus hudsonicus*. HUDSONIAN CHICKADEE.—The lowest point at which this bird was seen was a short distance below our camp in the Great Gulf (altitude, 3050 feet). It was rare there, however, and during our two weeks' stay we saw only five. About the Half-way House in Tuckerman's Ravine, and on the path from there to the carriage road, it was comparatively plenty, as low as 3300 feet, though nowhere an abundant bird. On September 2, 1884 a small flock was seen in the 'saddle' between Mt. Jefferson and Mt. Adams, though the dwarf spruces were not over two feet high.

Ank, 4, April 1887. p.107

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**Bds. Obs. in Franconia, N.H. June 11-21
'86, and June 4-Aug. 1, '87. W. Faxon**

80. *Parus hudsonicus*. HUDSONIAN TITMOUSE.—Two seen on Mt. Lafayette, June 12, 1886, 3900 feet above sea.

Ank, V. April, 1888, p.163

100

Parus hudsonicus

1886

1873

Parus hudsonicus

Essex, N. H.

August 25. Two shot by Will
Shawms from flock of three
in bushes near road close
to hotel

" 29. One shot by C. R. Bond.
in hundreds. It was
accompanied by about 5 other
birds of the same species
and a number of Black capped
Chickadees.

" We got about here from
Hudson's Bay and saw
about 20 others "
(with George C. R. Bond.)

1884

Parus hudsonicusShelburne
N. H.

August 9. "Found a flock of
Hudson Bay Tit near the
summit [of Mt. Bald Cape] & xx but
I only secured one specimen. There
was probably ten or a dozen Hudson
Bay Tit and a number of Golden
crested Kinglets, Red-billed Nuthatches,
Common Chickadees etc. in the
"well".

Ank. XIII, Oct., 1896, p. 345.
The Hudsonian Chickadee breeding in Southern Vermont.—On June 29, 1895, I found two Hudsonian Chickadees (*Parus hudsonicus*) and one Black-poll Warbler (*Dendroica striata*) on the summit of Stratton Mountain in southern Vermont. According to the U. S. Geological Survey the altitude of Stratton Mountain is 3859 feet, and these birds were observed at an altitude of about 3800 feet. The latitude is about 43° 6'—26 miles north of the Massachusetts line. As far as I can learn, the Hudsonian Chickadee has never been recorded from as far south in the breeding season. The Black-poll Warbler has been found by Mr. Bicknell and others in the Catskills, but I can find no other more southern record for it.—FRANCIS H. ALLEN, *West Roxbury, Mass.*

Parus hudsonicus.

Cook, VII, Oct. 1890,
pp. 407-8.

For Vermont record see

"The Hudsonian Chickadee in Vermont
and Massachusetts. W. Tappan."
under Mass. records.

pair nested.

Penthestes hudsonicus hudsonicus. HUDSONIAN CHICKADEE.—
1912, Dec. 26, one seen.—LUCRETUS H. ROSS, M. D., Bennington, Vermont.

Ank 20, July, 1913, p. 437.

Paul Rudolphi

16.

Emerald, Wash.

Oct 20 1880

Amie. Sent me Podiceps trifasciatus in
Halls. Took part of Emerald. Saw & satisfactorily
identified a specimen of this Podiceps
and Podiceps are occurring between two
strata when the Podiceps and Podiceps
Podiceps trifasciatus, New Emerald. See from an
isolated. See below. I walked up creek
under the tree when I found the author
of the Emerald. I obtained about near the top of
climber. Saw this Podiceps from Oak and Chestnut
birds but Podiceps could change. my child is New

As he prodded the piece of wood a change of
direction but he went on without much delay
into the thick foliage. I saw him get very near him
but the bush was so thick and his position so
poor that he finally escaped me. He was alone
but the neighboring birds were alive with migration
partly. I pushed and - I saw no other birds
The bird was very small and I saw it
The bird came in from the front.

Mass. (Wellesley)

Parus hudsonicus 17.

1880

Oct. 30

Shuman F. Denton has the skin of a ♂ which he shot at Wellesley Mass. Oct 30, 1880. It is in perfect autumn plumage. (Bird examined by W. B. W. 26 - 1888)

Parus hudsonicus Dec. 31 ^{Admitted} 1884 - C. Mass.

A SECOND OCCURRENCE OF THE HUDSONIAN TITMOUSE (*Parus hudsonicus*) IN MASSACHUSETTS. — On the morning of October 7, 1880, while hunting Woodcock in Concord I satisfactorily identified a specimen of this northern Titmouse. I was crossing an opening when a familiar and emphatic *tchip, tchee-day, day*, greeted me from an isolated red cedar near at hand. Upon closely examining the tree I soon spied the author of the sound hopping about near the top. The next moment he flew and pitched into a thicket of low birches on the edge of the neighboring woodland. Here I several times got very near him — too near in fact to use the heavy charges with which I was alone supplied; but I so plainly saw his light brown cap and chestnut sides that I scarcely regretted it, when at length he somehow gave me the slip and disappeared. The preceding night had been sharp and frosty and the wood edges were alive with migratory Warblers, Thrushes, and Sparrows. Although specimens of the Hudsonian Titmouse have lately been taken in Connecticut and Rhode Island, I believe my former Concord record has until now remained the only definite one for Massachusetts. — WILLIAM BREWSTER, *Cambridge, Mass. Bull. N. O. C.* 6, Jan., 1881, p. 54. 19

THE HUDSONIAN TITMOUSE IN MASSACHUSETTS. — December 31, 1880, I shot a Hudsonian Titmouse (*Parus hudsonicus*) in my garden at Cambridge. It was very tame and, in company with one Black-capped Titmouse, was hopping about on a low pear-tree when secured. The thermometer had been in the neighborhood of zero for several days and the Black-capped Titmouse unusually numerous. This is, I believe, the third appearance of the Hudsonian Titmouse in Massachusetts. — HENRY M. SPELMAN, *Cambridge, Mass. Bull. N. O. C.* 6, April, 1881, p. 114. 20

Parus hudsonicus, Waverly,
Mass. (near the Convalescent Home)
One bird.

1889.

Nov. 17.

1890.

Jan. 1, 5, 8, 26.

Feb. 7, 13, 16.

Mar. 2, 12, 16, 20, 24, 30.

April 1, 3, 5.

It was usually with a large flock
of P. atricapillus. Then all disappeared
at about the same (F. thinks exactly the
same) date as the P. hudsonicus. Faxon is
sure that he got the date of departure
of the latter within two days.

If you want definite dates ^{as}
for the Hudsonian Tit - a small
Redbird, here they are:

Parus hudsonicus. Oct. 18,
two specimens in a white pine woods,
Bellevue, near Waverly, Mass.;
one shot Oct. 19; the other remained
in the same place as late as the
22d.

Parus hudsonicus. Nov. 17, 1889.
One in pine woods near the Waverly

Convalescent Home, Waverly, Mass.
[W. Faxon]

HUDSONIAN TITMOUSE IN MASSACHUSETTS.—Mr. Ralph A. Quimby of Boston had the good fortune to secure a specimen of the Hudsonian Titmouse, (*Parus hudsonicus*), while collecting in Quincy, Mass., March 14th. It was with the Common Black-capped.

O. & C. X. Apr. 1885. n 64.

Capture of the Hudsonian Chickadee in Worcester County, Mass.—A specimen of this species (*Parus hudsonicus*) was taken in a low swampy tract in North Ashburnham, Mass., during a blinding snowstorm, March 17, 1890. While wading through the snow along an old cart-path in the above-mentioned swamp I thought I detected an unfamiliar chirp in the bushes near by, and presently three dark colored birds appeared in sight. I immediately fired at the nearest one, but must have missed it, as, with the aid of my setter, I could not find it. In the mean time the other two had disappeared, but following carefully along in the direction they had taken I soon found them again, and secured one with the right barrel, but the other shell missed fire, but a friend with me, from whom the other bird was hidden by thick bushes, handed me his gun and I secured it. They proved to be a young male and a female, the first examples of this species, I believe, ever taken in Worcester County.—R. E. KIMBALL, Fitchburg, Mass.

Auk, VII. July, 1890, p. 291-292.

The Hudsonian Chickadee (*Parus hudsonicus*) in Vermont and Massachusetts.—While passing through a large larch swamp in Sutton, Vt., Aug. 16, 1889, I saw three or four Hudsonian Chickadees in company with a number of common Chickadees. A specimen shot proved to be a bird of the year. I do not remember to have seen any previous record of this species in the State of Vermont. From the date and from the nature of the locality it is probable that the birds bred there.

On October 18, 1889, I found two individuals of this species in a white pine grove in Arlington, Mass. These also were among a flock of common Chickadees. The following day I shot one of them. The survivor remained in the same grove as late as the 22d. On the 17th of November of the same year I discovered another in a small grove composed of white pines, pitch pines and red cedars in Waverly, Mass. This bird remained in the same wood throughout the following winter. I saw it at frequent intervals up to April 5, 1890, when it disappeared together with a large flock of the common species—its associates throughout the winter. Very likely the Hudsonian came from the north with the Blackcaps in the autumn and returned with them in the spring (cf. Allen, Bull. Mus. Comp. Zool., II, 262). During its sojourn with us it was much less active and noisy than its Black-capped cousins and stuck more closely to the evergreen trees. While the Blackcaps made daily foraging excursions extending a quarter of a mile or more beyond the limits of the grove, the Hudsonian remained behind, silently awaiting their return. The peculiar tone of its voice affected even its simple *chip*, so that, after long acquaintance, I could trace the bird merely by this simple clue.

During a short trip with Mr. William Brewster to Mt. Graylock, Berkshire Co., Mass., Dec. 14-20, 1889, we found the Hudsonian Titmouse on four several days—three or four specimens in second-growth pasture spruces in the Notch (alt. 1600 ft.), and a flock, estimated at six to ten, in the 'Mountain Pasture' (alt. 2200 ft.).

Assuming that the Waverly bird was not the survivor of the pair seen in Arlington (the two localities are three and a half miles asunder), it makes the ninth, I believe, recorded from eastern Massachusetts. At least two unrecorded specimens have been killed in this neighborhood—one by Mr. S. F. Denton in Wellesley, Oct. 30, 1880, and one by Mr. Brewster in Belmont, Dec. 31, 1884. It has also been taken in Rhode Island and Connecticut. Instead of regarding this species as *accidental* in Massachusetts, as Mr. Allen does in his list of the birds of the State, I believe it to be a rare (perhaps irregular) bird of passage in the eastern part of the State, while probably considerable numbers descend in autumn along the spruce belt of the Green Mountains into northern Berkshire. That it breeds on Mt. Graylock I think improbable, as it was not found there in the summer by either Mr. Brewster or myself during several weeks spent in exploring the mountains in the years 1883, 1888, and 1889.—WALTER FAXON, *Museum of Comparative Zoology, Cambridge, Mass.*

Auk, VII, Oct, 1890, p. 407-408.

Auk, XIII, Oct., 1896, p. 346.

The Hudsonian Chickadee (*Parus hudsonicus*), Red-breasted Nuthatch (*Sitta canadensis*), and Golden-crowned Kinglet (*Regulus satrapa*) in Plymouth County, Mass., in Summer.—While walking through some dense old-growth pine woods (*Pinus strobus* and *P. rigida*), on June 5, 1896, I was greeted by the snarl *chee-de-e-e-e-ah* of a Hudson Bay Titmouse. In a few moments the bird, which was apparently alone, alighted within a few feet of me on a dead pine, and spent some time in exploring the cavities of a broken limb, from which he drew several lively white larvae, one of them so large that it was swallowed with seeming difficulty but evident relish. The characteristic note was frequently uttered while feeding, but was sometimes shortened to *dee-e-e-yuh*. The bird then flew to a high pitch pine, and I did not see him again, though I heard him several times.

The woods in which I saw the Chickadee were only a few rods from a large cedar swamp, said to be a couple of miles wide, which is seldom visited except by lumbermen in winter; and in many portions the original growth of huge white cedars (*Cupressus thyoides*) and hemlock (*Abies canadensis*) has never been cut. In this old timber one seems to be in northern Maine or New Hampshire, instead of in Massachusetts;—the subdued half twilight of the damp cool forest, with its rocks and fallen trees, covered with a rich carpet of green moss and ferns might well tempt this and other northern birds to make it their summer home.

I saw nothing more of the Chickadee however; but throughout June and July Brown Creepers (*Certhia familiaris americana*) were quite often seen in the swamp; the Hairy Woodpecker (*Dryobates villosus*) outnumbered the smaller Downy (*D. pubescens*); and at least two pairs of Golden-crowned Kinglets (*Regulus satrapa*) spent the summer, newly fledged young being noted during the first week in August. One, and I think several, pairs of Red-breasted Nuthatches (*Sitta canadensis*) evidently nested here also, though I failed to find the nest; and fresh 'peck-holes', as well as the local lumbermen, testified to the presence of the Pileated Woodpecker (*Geophylæus pileatus*) during the past year!—ARTHUR P. CHADBOURNE, M. D., Boston, Mass.

¹ In Massachusetts, the *Hudsonian Chickadee* has been recorded only during the winter and early spring.

Although the *Brown Creeper*, "has been twice found nesting in eastern Massachusetts and once at Springfield, its normal summer range is limited very strictly to the Canadian fauna. It breeds regularly on Mt. Graylock in western Massachusetts" (Brewster, in Minot's Birds of New England, second edition, 1895, p. 66).

Regulus satrapa has been found breeding "in the higher portions of Berkshire and Worcester Counties, Massachusetts. A single well-authenticated nest has been taken at Lynn, Massachusetts" (Brewster, loc. cit., p. 52).

Sitta canadensis, like the Kinglet, breeds in "Berkshire and Worcester Counties, Mass." (Brewster, loc. cit., p. 64).

The *Pileated Woodpecker* is now so unusual in eastern Massachusetts as to be almost a straggler.

Hudsonian Chickadee about Boston, Mass.—Mr. M. C. Blake and I have four records of the *Hudsonian Chickadee* (*Parus hudsonicus*) in the vicinity of Boston in November, 1904, namely: Middlesex Fells, Virginia Wood, November 4; Ipswich, Castle Hill, November 12; Belmont, November 25; and Waverley, Beaver Brook Reservation, November 25. In each instance a single *Hudsonian* has been in the company of a flock of Blackcaps in evergreen growth. In the case of the Ipswich bird he was in closely growing young spruces and hardly above the level of the eye and was very finely seen while he gave a sweet warbling song. The Belmont bird was also well seen and gave a few notes of the warbling song. In another flock of *P. atricapillus* the distinctive calls of a second *hudsonicus* were heard, and when we reached Waverley upon the same afternoon a third *hudsonicus* was giving calls among a flock of *atricapillus*. As it has not been my good fortune in previous autumns and winters to meet with this species, it would appear that at least it is in more evidence this season in the vicinity of Boston than for the last five years.—

HORACE W. WRIGHT, Boston, Mass.
Auk, XLI, Jan., 1905, p. 87.

The Labrador Chickadee (*Penthestes hudsonicus nigricans*) at Cohasset, Mass., late in May.—From May 19 to 23, 1917, inclusive, a Brown-headed Chickadee, probably the Labrador form, was seen several times each day in the garden. The bird was very tame and easily recognized. The peculiar note first attracted my attention, and after once seeing the bird it was easy to find it at any time during its stay with us. Usually it was with a small flock of the Black-capped Chickadee (*Penthestes a. atricapillus*) and was as easily approached and as tame as is its more southern relative. A thick row of spruces bordering the garden seemed to be its favorite haunt. Neither species remained on the place during the summer.—ARTHUR P. CHABOURNE, M. D., *Jerusalem Road, Cohasset, Mass.*

Auk. Vol. xxxiv. Oct. 1917. p. 486.

CAPTURE OF THE HUDSONIAN TITMOUSE IN RHODE ISLAND. — November 1, 1880, my friend Mr. Thomas Adcock brought to me a Hudsonian Titmouse (*Parus hudsonicus*) which he had just killed in Smithfield, R. I., near the northwestern limit of the city of Providence. I obtained it of him for my cabinet. Its identity was not suspected by Mr. Adcock till he picked it up. It was in company with two other Chickadees, but he was unable to obtain either of them, and could not determine whether they were of the same species as the one taken. — FREDERIC T. JENCKS, Providence, R. I. *Bull. N. O. C.* 6, Jan., 1881, p. 54.

The Acadian Chickadee (*Penthestes hudsonicus littoralis*) at Watch Hill, R. I. — On the morning of October 30, as I stepped from the house, it was obvious that there was a phenomenal flight of Chickadees (*P. atricapillus*), they were everywhere, in the bushes, hopping over stones in a field, and strung out along a telegraph wire. Some hours later I was walking down a road through some woods, bordered on each side by tangles of vines and bushes, full, of course, of the omnipresent Chickadees. Suddenly close behind me I heard a familiar, hoarse, *tsi'h-a, da'y, da'y*, bringing back memories of days spent in the north woods. I turned quickly around, discovered an Acadian Chickadee about twelve feet away working his way through the vines, calling repeatedly to his comrades, the Black-capped Chickadees, not far away. The dark brown cap, the brownish back and the rufous sides contrasted very markedly with the gray, black and white of *atricapillus*. Even at a distance of 100 feet I found that the Acadian was easily distinguishable from the common species with binoculars. The next day, October 31, a flock of four were feeding in some bushes bordering the golf-grounds. As this was the second record of the occurrence of this species in the state, and there was what might almost be called a fight for so rare a bird, I tried to collect one with a cap and golf-sticks but was unsuccessful, succeeding merely in getting very close. On November 5 several miles away on Napatree Point I saw a single Acadian Chickadee in a little tree near some cottages, and a little farther on two more climbing over a crate. These were the last birds I saw.

When I arrived in New York City, I received interesting confirmation of my observation in that this species had been noted around Boston by several observers in several localities. Recently, I have been informed that they have been reported from Connecticut. Previous to this winter its status in southern New England seems to have been as follows — very rare winter visitor to Boston, one record for Rhode Island, and one for Connecticut. — LUDLOW GRISCOM, New York City.

Auk. XXXI. Apr. 1914. p. 254.

Parus hudsonicus in Connecticut.

On November 13, 1875, Mr. Robert Morris, while shooting in a wooded ravine a few miles from town, killed a female Hudsonian Titmouse (*Parus hudsonicus*). The specimen is now in the collection of Mr. Thomas Osborn of this city. It is, I think, the first occurrence of this species south of Concord, Mass. — C. HART MERRIAM, *New Haven, Conn.*

Bull. N. O. C. I, July, 1876, p. 52.

Oneida County, New York,
William L. Ralph & Egbert Bagg

Parus hudsonicus.—A specimen was killed by Mr. Hughes at Remsen, Dec. 25, 1886. This species was given in the List on the authority of Dr. Merriam.

Auk, VII. July, 1890, p. 232.

Birds of the Adirondack Region.
C. H. Merriam.

13. *Parus hudsonicus*, Forster. HUDSONIAN CHICKADEE. — Rather rare visitor from the north. A few may breed, occasionally, but are not known to do so.

Bull. N. O. C., 3, Oct, 1881, p. 226

Oneida Co. N. Y. — Egbert Bagg

Mr. R. J. Hughes, of Remsen, killed a Hudsonian Chickadee (*Parus hudsonicus*), at that place in December, 1886.

Cond. O. XIII. April, 1888, p. 58

528. *The Hudsonian Chickadee.* (*Parus hudsonicus.*) By Montague Chamberlain. *Ibid.*, III, pp. 215-217.—Biography of the species.

Can. Sport. & Naturalist

General Notes.

Distribution of the Hudsonian Chickadee.—In his paper on 'The Hudsonian Chickadee and its Allies,' published in 'The Auk' of Oct. 1893, Mr. Rhoads makes the statement (p. 322) that "this Chickadee is a rare visitor in Manitoba, Ontario and Quebec, and for that matter, in any non-mountainous locality south of Hudson's Bay." This is entirely contrary to my experience. In that part of Nova Scotia that I am particularly familiar with, Annapolis, Yarmouth and Digby Counties, this bird is extremely abundant. Every autumn for the past eight years I have spent a month or more with Digby as my headquarters.

Here the Hudsonian Chickadee is rather hard to shoot owing to the nature of the country it inhabits, keeping almost exclusively in the thick second growth spruce and fir woods, but in a day's walk through their favorite haunts I never fail to see less than twenty-five or fifty and often many times that number. In October and November they are in large loose flocks in company with the Common Chickadee and the Golden-crowned Kinglet, and often the spruce woods seem fairly alive with these birds, always in motion, always passing on and on through the spruces, so fast that it is impossible to keep up to them. Often while walking through these dense forests of evergreens, suddenly as if by magic, the trees about one will become alive with these three species, their cheerful notes sounding from every branch and the next moment, as suddenly as they came, they will disappear again and leave the forest still and gloomy as before.

The country about Digby is strictly non-mountainous, and what hills there are, as the North Mountain back of the town of Digby, and the hills back of Granville on the opposite side of the Annapolis Basin, are covered with a hard wood growth, for the most part, principally beach. I never found the Hudsonian Chickadee in these woods. In fact I have never seen them except very occasionally anywhere but in the thick spruces and firs.

My own experience is, as I have stated above, confined to the autumn months, but my friend, Mr. H. A. P. Smith of Digby, N. S., who is a careful observer, tells me the bird is strictly resident and breeds abundantly.

In August and September, 1880, my brother, E. A. Bangs, was camped on the Restigouche River, N. B., and found the Hudsonian Chickadee very abundant all along the river. He got a good series of them without any difficulty.

So far from its being a rare visitor in any non-mountainous locality south of Hudson's Bay, I should be much surprised not to find the Hudsonian Chickadee abundant in any part of Canada, New Brunswick or Northern Maine, where the country was suitable to its mode of life.—
OUTRAM BANGS, *Boston, Mass.*

Auk XI, Jan, 1894 p. 81-82

New Brunswick Notes - Chamberlain.

From several letters received I am led to suspect that the correctness of the statement, made in my catalogue, that the Hudsonian Chickadee breeds in New Brunswick, has been questioned. There need not be the slightest doubt on this point, as I have seen four nests here; one in 1878, built in a stump; another in 1880, built in a telegraph post close by the railway station at Sutton; and two during last season. Of the latter, one was found near Edmunston by Mr. H. A. Purdie, and the second was found by Mr. J. W. Banks in the suburbs of St. John. These two were so similar, in position as well as construction, that a description of one will serve equally well for both. They were built in decayed stumps (apparently of firs or spruces) some three feet high and five inches in diameter. The entrance was from the top of the stump, and for the first six or eight inches was about two inches wide; then it widened gradually to three inches, which latter width was carried down another six inches to the bottom of the excavation. On the bottom a platform of hard-packed, dry moss had been placed, and upon this a second platform of felt, or felted hair, of a bluish-ash color (probably the inner fur of the common hare), and on this base rested the cup-shaped nest, which was also composed of this same felted fur. The walls of the nest were constructed with great neatness and precision, and were about two and one-half inches high and half an inch thick. In the nest found by Mr. Purdie the walls and lining were composed exclusively of fur, but in that found by Mr. Banks there was a considerable quantity of cow's hair interwoven, or rather felted, with the fur. I saw the nest at Edmunston on June 14, and the young in it were then but sparsely clothed with down and showing little signs of feathering; and when I examined the nest near St. John, on July 1, the five young which it contained were in much the same stage of development as those in the former nest had been.

Bull. N. O. C. 3, Jan, 1883, p. 10.

Nesting of the Hudsonian Chickadee (*Parus hudsonicus*).—I find that this species, when excavating for its nest, sometimes enters from the side of a tree, and not invariably from the top of a stump, as I have stated elsewhere. My co-laborer in this district, Mr. James W. Banks, during the seasons of 1885 and 1886, discovered three nests of which the entrance was at the side of a decayed stub. One of these, now before me, is a rather interesting example. It lays in the section of the tree (a poplar) just where it was placed by the birds. The tree measures four inches in diameter, and the nest fills all the space excepting the little that is taken up by the outer bark, and on one side by a slight margin of the decayed wood. The nest is about two inches deep, and is set on a cushion of dried moss. Beside the felted fur used in the construction of the nest, there is considerable dry moss mixed through, a material I have never before seen in the nests of this species.

The entrance was about six inches from the top of the nest. After piercing the outside shell of bark the excavation turned downward, and was carried obliquely some four inches, where it was abruptly widened from two to four inches. This width was continued to the bottom.—MONTAGUE CHAMBERLAIN, *St. John, N. B.* **Buk.** 4, July 1887, p. 2

Brief Notes.

NESTING OF HUDSONIAN CHICKADEE IN MAINE. 34

On July 10, 1893, while I was walking in the spruce forests in Cutler, Washington County, Maine, a small bird suddenly flew from the lower branches of a small spruce tree near an opening in the woods.

I thought she had just left her nest, and upon investigating found it in a natural cavity in the stub of a small hard-wood tree which had been destroyed by fire some years before.

I waited some time for the bird to return to identify it. In the course of fifteen minutes she returned, and flew into the hole which contained the nest.

When she came out, in about a minute, I shot her and found she was a Hudsonian Chickadee.

The entrance to the cavity was about 16 inches from the ground, and the cavity itself was about eight inches deep.

The nest was compact and large, made of rabbit's hair and moss. It contained six young birds, a few days old.

Gardner W. Hall.

O. & O. Vol. 18, Oct. 1893 p. 144

LAST SESSION

Of Maine Ornithological Society,
for 1904.

INTERESTING PAPERS

Were Read at the Meeting Saturday Af-
ternoon—With Fine Talk by
Manly Hardy.

The closing session of the Maine Ornithological society at the assembly room of the high school building on Saturday afternoon, was one of the most interesting of the entire convention, the literary exercises being varied and entertaining and the audience a good one although by no means as large as the occasion should have called together. This was no doubt partially due to the fact that it being on Saturday afternoon many members from out of the city were obliged to leave early in the day in order to reach their homes that night.

An interesting letter was next read from Sanford Ritchie of Dover, by Prof. Powers, secretary of the society, in which the writer gave an account of the breeding of the Hudsonian Chickadee at Dover, Piscataquis county, Mr. Ritchie's letter follows:

Breeding of the Hudsonian Chickadee
(Parus hudsonicus) at Dover, Me.

By Sanford Ritchie.

There has been so little said or written in relation to the breeding of this species that the record of a nest with young discovered by the writer the present season may be of some value to the working ornithologists.

During a 12 years' residence at Dover, Piscataquis county, I have occasionally during my rambles met this species, but the meetings have usually occurred during the late fall or winter seasons, and have been so infrequent as to merit a special record in my notes. Accordingly it was indeed a surprise to discover a pair engaged in the act of rearing a brood of young this season. The date was June 21. I had spent the morning botanizing in a place locally known as Sangerville bog, located two west from Dover village, the nearest portion of the bog being about a mile distant. The boundary line between the town of Dover and Sangerville passes directly through the morass, a portion lying in either town, but the "find" was located on the Dover side.

This bog is of the character of many others scattered throughout northern and central Maine, lying in a valley surrounded by hills of moderate height, the slopes of which are well wooded, principally with beech, birch and poplar. The swampy margin of the bog produces a belt of birch and cedar with a fair percentage of yellow birch and swamp maple, while the center of the bog consists of open areas interspersed with clumps of the hackmatack, locally known as Juniper.

The nest was located in the coniferous belt at the extreme edge of the swamp, about six rods from an opening where the growth had been cut away and is now occupied as pasture. A portion of a dead cedar, nine inches in diameter and about ten feet in length, had fallen and stood leaning with a gentle incline against a birch and in this stub about four feet from the ground the nest was located. The birds had done apparently but little excavating in solid wood, taking advantage of a decayed place in the side of the stub and there being their building operations.

The opening at the entrance was irregular in shape, measuring about two by three inches, the cavity expanding with the descent until a depth of six inches was reached where the inside diameter was about four inches and there the nest was placed. It contained six young birds, well covered with dark feathers, which were probably about a week out of the shell, and they filled the nest so completely it was a question how they would all be able to exist and reach maturity in these narrow quarters.

The old birds were engaged in feeding the young, and the fact of one having a woodland moth—species unknown—in her (?) bill first led me to suspect a brood of nestlings might be near. Both birds were seen and positively identified through my glass at a distance of about 30 feet before the nest was discovered. While I was examining the nest, the bird with the moth in its bill, presumably the female as she was the most fearless of the pair, flew to within seven or eight feet of my head and nearly on a level with it, showing the greatest anxiety and uttering piteous cries. Her call notes before I approached the nest were similar to the following syllables, tswee-oh, yee-ee-oh, (emphatic) on last syllable and with rising inflection and were uttered at intervals of five or six seconds quite constantly. The male was not apparently as anxious as his mate, nor did I hear any note from him during my stay in the vicinity of near a half hour.

I could not remain longer to study this interesting family and after carefully marking the spot, returned home intending to return and secure material, proof of the bird's identity, but business detained me and I was not able to again visit the place until July 1, an absence of ten days, when I found the nest empty. From its appearance I had no doubt that the young brood had occupied it until within a day or so and was expected to find them near, but a search of the surrounding territory failed to discover any trace of them.

The stub containing the nest was secured and the nest being examined and proved to consist mainly of vegetable down from ferns and what appeared to be the fur of the northern hare or rabbit nicely felted together.

This record of Parus hudsonicus would appear to indicate a later season of breeding than that occupied by P. atricapillus, as I discovered a flock of the latter containing both the old and young birds several days from the nest, feeding only a few rods from the spot where they sang in their joy, they concealed the brood of young hudsonicus which appeared to be only about a week out of the shell. Accordingly atricapillus must have been out in the world quite ten days ere hudsonicus would leave its nest.

During my rambles in this vicinity in the months of September and October, I found hudsonicus to be more numerous than during previous years, and on at least one occasion a flock containing five or six individuals was seen. My hope that this occasional resident bird is becoming more abundant within our borders, and that the observations of several seasons may prove it to be a permanent though rare species.

At the conclusion of this letter, Mr. Manly Hardy of Brewer entertained the audience with a most entertaining and original half-hour's talk in which he gave many interesting experiences and observations of his life as a naturalist. We cannot do justice to his rapid and inspiring talk, and in the absence of notes will not attempt it. Mr. Hardy was simply at his best, and his entertaining, familiar talk was greatly enjoyed. He seemed full to the brim of curious and original recollections of incidents connected with bird and animal life observed in long years of most accurate and careful study, all of which were apt and many of which were new. All present would have willingly listened for a much longer time to the valuable and lively remarks of this veteran naturalist, whose knowledge of wild-ways life and whose study of birds is excelled by that of no man in Maine at the present day.

Interesting remarks on some of Mr. Hardy's observations were then made by Mr. Ora W. Knight.

THE HUDSONIAN CHICKADEE AND ITS ALLIES,
WITH REMARKS ON THE GEOGRAPHIC DIS-
TRIBUTION OF BIRD RACES IN BOREAL
AMERICA.

BY SAMUEL N. RHODS.

WHILE examining the series of *Parus hudsonicus* at the Smithsonian Institution to determine the status of *Parus hudsonicus columbianus*, Mr. Ridgway suggested to me the desirability of a careful study of the affinities of the several members of this group described by authors. A request for specimens was made in my description of the British Columbian form of *hudsonicus* in 'The Auk' for January, 1893. No answers to this appeal were received, and after a lapse of two months I started a correspondence with several of the most prominent collectors for the loan of skins. From five of these I received, in all, twenty-five specimens, Mr. Brewster sending seventeen, Prof. J. Macoun two, Mr. K. C. McIlwraith four, Mr. A. G. Kingston one, and the Natural History Society of Toronto one. Several of my Canadian correspondents, from whom I had

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and anyone having such specimens should send them to the
Natural Sciences at an early date in order that they may be
examined, with the original series, at the next meeting of the
A. O. U. Committee on Nomenclature.

The Hudsonian Chickadee, *Parus hudsonicus*, was first described by J. R. Forster in the Transactions of the London Philosophical Society for 1772. His description was based on specimens sent him from the Hudson's Bay post at Fort Severn, on the southwest coast of Hudson's Bay, at the mouth of the Severn River. Since that time three races of *Parus hudsonicus* and one closely related species, now classed by the A. O. U. as a subspecies, have been described.

expected substantial aid, had not seen the bird in life and their testimony develops the rather unexpected fact that this Chickadee is a rare visitor in Manitoba, Ontario and Quebec, and for that matter, in any non-mountainous locality south of Hudson's Bay.

The total result of my search for skins is a suite of eighty-one specimens, the collections of the Smithsonian Institution, the American Museum of Natural History, and the Academy of Natural Sciences supplying fifty-six, and private individuals twenty-five of these. To the gentlemen who have done me service in this connection I would here again express my sincere thanks.

The great extent of the habitat of *Parus hudsonicus* and the fact that three subspecies and one species, of slight differentiation from the type form, from Alaska, British Columbia and Nova Scotia, have been described by authors, make it imperative that a complete study series should contain many times the number I have collected, and come from many times the number of localities represented. Were it probable that any considerable additions of this kind would be made in the next decade it would be advisable to postpone this paper, but the regions from which specimens are most needed give no promise in this direction. There is, however, enough evidence in the present series to throw considerable light on points in question, and the value of such testimony, incomplete and circumstantial as much of it is, is too great to be thrown away and may justify some risks taken on the theoretical side. Undoubtedly there are many specimens of this bird in America which are yet available, and it is hoped that anyone having such will forward them to the Academy of Natural Sciences at an early date in order that they may be examined, with the original series, at the next meeting of the A. O. U. Committee on Nomenclature.

The Hudsonian Chickadee, *Parus hudsonicus*, was first described by J. R. Forster in the Transactions of the London Philosophical Society for 1772. His description was based on specimens sent him from the Hudson's Bay post at Fort Severn, on the southwest coast of Hudson's Bay, at the mouth of the Severn River. Since that time three races of *Parus hudsonicus* and one closely related species, now classed by the A. O. U. as a subspecies, have been described.

In 1863, Dr. Henry Bryant secured a family of Chickadees at Yarmouth, Nova Scotia, and gave a description of them in the ninth volume of the Proceedings of the Boston Society of Natural History under the name "*Parus hudsonicus*, var. *littoralis*." Dr. Bryant comments on certain differences of size and color between his Yarmouth birds and those from Hudson's Bay, as follows: "The specimens of *Parus hudsonicus* from Yarmouth and those from the Hudson's Bay Territory present as great, if not greater, differences in size than exist between *P. carolinensis* and *P. atricapillus*, and in color between *P. septentrionalis* and *P. atricapillus*." As Dr. Bryant goes into no definite comparisons of the two forms, we must conclude that he considered the Yarmouth birds smaller and darker than those from Fort Severn.

This brings us face to face with the important question as to what are the exact characters of typical *hudsonicus*. We have Forster's original Latin description, which is quite detailed. From it we can adduce only one or two decisive facts. One of these is the measurements; but even these are open to some doubt, owing to the different methods of measurement adopted by naturalists. We are, however, convinced that Bryant's measurements were taken from smaller birds than those of Forster. But these differences are no greater than those I have detected between individuals of a series of over twenty from Campbellton, New Brunswick, all secured in April and May of the same year. When we turn to color definitions to solve the difficulty it only increases our bewilderment. The best we can make out of Forster's description is that the top of the head in *hudsonicus* is "reddish brown"; in another place it is "ferruginous brown"; the back is said to be "ashy green, brownish on longest feathers" and the "ends of the feathers somewhat olivaceous brownish green." Comparing this with *littoralis* whose crown and hind neck are said to be "faded, yellowish ash, with back, scapulars and rump dirty ash" there is only one thing certain,—a belief in Dr. Bryant's mind that *littoralis* was lighter colored than *hudsonicus*. But Bryant's description was taken from a pair of birds which had raised a brood and were in the worn and faded plumage of midsummer. I happen to have three such birds from Steiwacke, Nova Scotia, which well answer Bryant's description but are

worthless for comparisons of the kind under consideration, being not only two or three shades lighter than spring and winter specimens from the same regions but having actually lost two to four millimeters from tips of wings and tail by abrasion. So far as descriptions go we have no proof that Forster's bird is any redder, browner, or darker than average *hudsonicus* from Nova Scotia and New Brunswick, the type region of *littoralis*; and the abraded condition of Bryant's specimens can fully account for the difference in recorded measurements.

A more direct way out of this difficulty would seem to be the comparison of recent skins of each form from their respective habitats. Strictly speaking this has been impossible, for my series¹ includes no skins from nearer the type locality of *hudsonicus* than Moose Factory, four hundred miles southwest of it on the shore of James' Bay. This specimen in size and color is comparable to larger skins from Canada East, and the New England States. As will be hereafter pointed out, the Severn River lies near, but within the northern boundary of the Hudsonian Fauna of the Cold Temperate Sub-region¹ within the eastern limits of which the climatic conditions are presumably quite uniform. West of this a race of *hudsonicus* prevails, distinctly separable from Forster's type on account of its larger size. In northern Labrador a humid-arctic environment has produced a race, which I have here described as new, under the name *ungava* (see below, p. 328), differing in size from largest *hudsonicus* from the southeast and showing marked color characters to distinguish it. So far as we can conjecture from Forster's description, his types approach the Labrador form in the so-called "reddish brown" of the crown, but even this is straining a point in favor of their identity with *ungava* as against their closer affinities with Bryant's *littoralis*.

In the absence of specimens from the west shore of Hudson's Bay the weight of evidence is in favor of assuming that the *P. hudsonicus* of Forster represents the northern extreme of what I have defined as the Hudson-Canadian type and not the southern extreme of the Barren Ground race.

Littoralis has not been recognized by the A. O. U., and is ignored by Mr. Ridgway in his 'Manual.' Dr. Coues makes

¹ The faunal nomenclature adopted is that of Dr. Allen in 'The Auk,' of April, 1893.

casual reference to it in the first edition of his 'Key' but omits it in the second edition.

The total lack of *hudsonicus* skins from the type locality is a fundamental defect, for upon the character of these depends the validity of *littoralis* and *ungava*. Should the Severn River types correspond to the Ungava birds, Dr. Bryant's form must stand and mine be regarded as a synonym of *hudsonicus*. There is a possibility that this is the correct arrangement but, as I have endeavored to show, it is improbable.

Another variety which, as such, has no place in the A. O. U. Check-List, was brought to public notice in 1884 by Dr. Coues in the second edition of the 'Key to North American Birds.' It is briefly introduced as follows:—"P. h. *evura* nobis. Alaska specimens are larger [than *hudsonicus*], the tail nearly 3 [inches]. Thus corresponding with *P. a. septentrionalis* and being quite the size of *P. cinctus*, from which distinguished by retaining precisely the coloration of *P. hudsonicus*." As will be shown, this race is as tenable as any other of the *hudsonicus* group. It is not, even in part, the same as *stoneyi*, which hails from a more arctic environment than any of the specimens examined by Dr. Coues.

P. h. columbianus, a third subspecies, was recently described by the writer in a preliminary report on the Birds of Washington and British Columbia, published in 'The Auk' (Jan., 1893). This race is characterized as larger and darker than any of a series of forty skins from Alaska and from other localities in British America. The type series was taken in the Rocky Mountains of southern British Columbia. Three additional skins, one each from the mountains east and west of the type locality in British Columbia, and one from the Rockies near the northwestern border of Montana, confirm my diagnosis that this race shows the highest development of the group both in size and depth of coloring.

A fourth form of *P. hudsonicus*, described by Mr. Ridgway in the appendix to his 'Manual of North American Birds' as a distinct species, *Parus stoneyi* (classed as a subspecies in our Check-List), is the last member of this perplexing group to claim attention. Its status has already been touched upon. To this list I feel justified in adding a fifth candidate, *P. hudsonicus*

ungava, representing the faunal peculiarities of northern Labrador and Newfoundland.

Geographic and climatic conditions in North America north of the United States result in a primary division of the country into two great life areas, the Temperate and the Arctic. Of these the Hudsonian Chickadee inhabits the southern border of the Arctic Realm and that part of the Temperate defined by Dr. Allen as the Cold Temperate Subregion, or the 'Boreal' of Dr. Merriam's faunal maps.

The Arctic Realm includes that part of the known habitat of *hudsonicus* from which were procured the types of Mr. Ridgway's *P. h. stoneyi* and my *P. h. ungava*. This district may be defined as a strip of varying width reaching along the Alaskan coasts and peninsulas of Bering Sea and the Arctic Ocean to the mouth of the Mackenzie River, thence to the mouth of the Nelson River and northward, including the north coasts of Labrador and Newfoundland. The Cold Temperate Subregion includes the type localities of *P. hudsonicus*, *P. h. evura*, *P. h. littoralis*, and *P. h. columbianus* and covers the remaining area of distribution of the group southward.

In the cases of *ungava* and *stoneyi* we have two races occupying very similar environments of minimum temperature and diminished flora but of differing humidity, and in all probability separated by a vast central area of the Barren Ground Fauna in which *hudsonicus* has no representative because of the almost total absence of trees in those regions. In *columbianus* we have another example of the maximum development of western races which, as in *evura*, Alaskan forms are sure to show, and in which the size generally increases as the habitat approaches the forty-ninth parallel.

Limiting ourselves to resident species of boreal North America, which show a tendency to split up into races, we quite invariably find the largest and darkest colored races in the southwest, either on the west slopes of the Rockies or in the West-Cascade region. The smallest light-colored forms hail from central and southeastern districts, while the extreme northwest and northeast produce forms of an intermediate character between the Rocky Mountain and Atlantic Coast races, the Labrador race being darker and somewhat smaller than its Alaskan counterparts, but not so dark

as the Rocky Mountain form. We may cite as illustrating this plan of racial distribution in Boreal and Arctic America, *Picoides americanus* with its subspecies *alascensis* and *dorsalis*, and *Acanthis linaria* with subspecies *holbælli* and *rostrata*. One of the tables appended to this paper will show their parallel differentiation with the Hudsonian Chickadees. In the same table I also include certain forms of the Rock Ptarmigan (*Lagopus rupestris*) and the Horned Larks (*Otocoris alpestris*), whose habitats and manner of differentiation have the same correlation with those preceding. Of course the distribution of the Ptarmigans and Horned Larks is, in the first case, more arctic, and in the second, more continental than that of the other three species given, but, considered solely with reference to their boreal distribution, there is more than an ordinary resemblance among them all in spite of the marked differences in their habits.

Owing to the comparative scarcity of summer specimens in the series, I have based all important comparisons on skins secured after the fall moult and before the breeding season, viz., between the fifth of August and the first of May. It would have been preferable to limit these comparisons either to fall or early spring birds but the series was too small to justify it. As in other species of the genus, there seem to be no differences between the sexes of this Titmouse, either in size or color, and I have consequently considered the adults of both sexes as equally representative of the characters ascribed to the species or subspecies under which they are classed.

Seasonal color phases in the *Parus hudsonicus* group are so slight and simple, being chiefly the result of summer bleaching and abrasion, it is easy to make due allowance for such differences when determinations were necessarily made from breeding specimens. The plumage of the young is too poorly represented to warrant special mention.

I. *Parus hudsonicus* Forst. HUDSONIAN CHICKADEE.

HABITAT.—All of southeastern British America, except northern Labrador and Newfoundland, from Lake Athabasca and the Nelson River south to mountains of northeastern Minnesota, northern Wisconsin, Michigan, New York, Maine, New Hampshire, Vermont and Massachusetts.

The Hudsonian Chickadee rarely visits the lowlands south of the 47th parallel except on the coast, and it is practically non-migratory. It breeds in the Adirondacks, the White Mountains, and the mountains of Maine, but has not been found in the Alleghanies even in winter. Its distribution west of the Great Lakes is a mystery but as given above probably approximates closely to the lines of the Cold Temperate Subregion as defined by Drs. Allen and Merriam. In the absence of specimens from a vast area to the southeast of the Severn, we may take the average of a series of twenty-five from the United States and Canada. On this basis *hudsonicus* may be characterized as the smallest, and, with the exception of *stoneyi*, the palest of the group. Worn summer specimens from Nova Scotia and New Brunswick are browner and smaller than any others in the entire series. They represent the *littoralis* extreme described by Bryant but show no differences of special diagnostic value from Ontario or United States birds, or from the specimen from Moose Factory. A fine series of spring birds from New Brunswick shows, with selected skins of like date from the United States, that *hudsonicus* is more unicolor on the upper parts, the pale reddish brown of crown differing but slightly from that of back. The same unicoloration is noticeable in *evura*, which is even more decided brown over the dorsal area in that race.

The only common character shared by *hudsonicus* and *ungava*, as compared with their western allies, is in the small size and attenuation of the bill.

Average measurements of 30 adults.—Wing, 61 mm. (58-64); tail, 60 (58-64); tarsus, 16 (15.5-16.5); bill from nostril, 7 (6.5-7.5).

Specimens and localities.—Moose Factory, St. James Bay, 1; Richmond Hill, Ontario 1; Ottawa, Ontario, 1; Beauport, Ontario, 1; Campbellton, N. Brunswick, 19; Point Lepreaux, N. Brunswick, 1; "New Brunswick," 2; Steiwacke, N. Scotia, 2; Halifax, N. Scotia, 1; "Nova Scotia," 1; "Labrador," 2; Island Falls, Maine, 1; Wadley Brook, Maine, 1; Sutton, Vermont, 1; Mt. Adams, Mass., 1; St. Regis Lakes, N. York, 2.

2. *Parus hudsonicus ungava*, subsp. nov. LABRADOR
CHICKADEE.

HABITAT.—Northern Labrador.

Subsp. char..—Larger, darker above and with slightly larger bill than *hudsonicus*. Plumbeous brown of crown and nape showing more marked

contrast to colors of upper parts and more extended posteriorly than in any other form. Sides of neck purer ash-gray than *hudsonicus*, that color nearly surrounding and contrasting with the crown as in *stoneyi*.

Adult male and female in spring plumage.—Types, ¹ ♂ No. 100,630; ♀, No. 93,565; Coll. Smithsonian Institution, Washington, D. C., coll. by L. M. Turner at Fort Chimo, Ungava, Labrador, March 17 and April 1, 1884.)—Crown, chocolate to plumbeous brown (never pale or ashy brown) well defined posteriorly against the ashy brown of back and laterally against the ash-gray sides of neck, which color, in extreme cases, nearly encircles crown. Dorsal area nearly uniform ashy brown, becoming rusty on rump. Wing feathers not only edged but secondaries distinctly tipped with ashy. Tail uniform slate, less ashy than in *hudsonicus* or *evura*. Throat and bill purer, clearer black; ocular spots larger, nearly black anteriorly and always (?) connected by well-defined frontlet of same color.

Measurements.—♂, No. 100,630; wing, 67 mm.; tail, 67; tarsus, 16.5; bill from nostril, 7. ♀, No. 93,565; wing (abraded) 63 mm.; tail (abraded) 63; tarsus, 16; bill from nostril, 6.6.

This race is as strongly characterized as *columbianus*, from which it differs in its smaller size, shorter and slenderer bill, and richer brown coloration, the brown of crown and nape being less dusky and that of sides more rusty as in *hudsonicus*. Compared with any of its allies, *ungava* shows better color definition, the dark brown of crown and nape contrasting abruptly with ashy cast of back instead of mingling insensibly into the shades of upper parts as in *hudsonicus* and *evura*. The dark spot surrounding the eye is also large and well defined and always present in such specimens as I have, while in all other forms except *columbianus* it is often nearly obsolete. The ashy white of sides of neck in *ungava* is even more noticeable than in *stoneyi* because of the darker hue of crown in former. The nearest ally of *ungava* is undoubtedly *stoneyi*, *evura* coming nearest *hudsonicus*, *columbianus* showing no decided affinities in either direction.

The only portion of the habitat of *ungava* represented by adult specimens is the region about Fort Chimo. A young bird from Rigolette shows same color values as the adults. It is recorded

¹ The only adult spring male in the Ungava series is typical in all respects save in the color of the crown, which is much lighter than the average, and the only typical spring female is somewhat darker than the average and is in worn plumage. No single spring specimen combines the requirements of a type, so I have thought it preferable to meet these requirements in the two skins selected than in a single winter specimen.

by Mr. Packard¹ from Okak, two hundred miles east of Ungava. Mr. McLlwraith sends three specimens labelled "Labrador." Of these probably two were taken south of the habitat of *ungava* and within the range of *hudsonicus*, with which form they seem to perfectly agree.² The range of *ungava* is probably coextensive with that of the Arctic Realm across northern Newfoundland. Its westward extension to and beyond the shores of Hudson's Bay can only be conjectured.

Average measurements of 15 adults.—Wing, 65.5 mm. (63 to 68); tail 65, (63 to 68); tarsus 16.2 (16 to 16.5); bill from nostril, 7 (6.5 to 7.5).

Specimens and localities.—Fort Chimo, Labrador, 14; Rigolette, Labrador, 1. "Labrador," (intermediate?) 1.

3. *Parus hudsonicus stoneyi* Ridgw. KOWAK CHICKADEE.

HABITAT.—Northwestern Alaska.

Mr. Ridgway's description of this race not only ignores any subdivision of the species *hudsonicus* but contains no reference to the *evura* of Dr. Coues with which it is almost identical in measurements. The special characters given by Mr. Ridgway to *stoneyi* are, however, in no sense synonymous with those of *evura* as stated by Dr. Coues. *Stoneyi* is characterized as "similar to *P. hudsonicus* but much grayer above, sides of neck purer ash gray, sides much paler rusty and throat clear slate black instead of sooty blackish." The measurements given for *stoneyi* by Mr. Ridgway are greater than his measurements of *hudsonicus* though he included under that name all the rest of the group, but he makes no reference to the comparative size of *stoneyi*, probably from the very reason that other Alaskan birds were as large. On the contrary Dr. Coues bases his *evura* solely on the larger size of Alaskan birds as compared with eastern ones and takes care to state that Alaskan birds retain the precise coloration of *hudsonicus*. My examinations of the two original specimens of *stoneyi*, which still remain the only adult representatives of their race in collections, fully confirm the value of the color diagnosis given to this form by its describer. It may now be more fully characterized as the palest of the group with wing measurements about the same as *ungava*, the bill being stouter

¹ Proc. Bost. Soc. Nat. Hist., Vol. X, p. 267.

² Mr. McLlwraith has since written me they all came from "southern Labrador."

and the tail averaging longer, being quite as long as in *columbianus*.

As stated in 'The Auk,' the three specimens of *stoneyi* are in bad shape and lack date of capture. One, in well advanced nestling plumage, is worthless for critical comparisons with adults. The other two are alike and characteristic enough to justify their present status in our nomenclature. Skins of *P. hudsonicus* from Nulato, Alaska, are of interest, confirming the close approach of boreal forms to the Arctic coast in the vicinity of Norton Sound, as defined by Allen and Merriam, such specimens being typical *evura* and not *stoneyi*.

Average measurements of 2 adults:—Wing, 64 mm. (62 to 66); tail, 66 (64 to 68); tarsus, 16.3 (16 to 16.5); bill from nostril, 7.1 (7 to 7.2).

Specimens and localities:—Kowak or Putnam River, Alaska, 3.

4. *Parus hudsonicus evura* Coues. ALASKAN CHICKADEE.

HABITAT.—Central and southern Alaska, west to Nulato, south to Bristol Bay and Fort Kenai, east to the Mackenzie River.

As stated in preceding descriptions, the Alaskan Chickadee seems to as fully merit recognition on account of size as the Kowak River race for its lighter coloration when the two are compared with *hudsonicus*. Mr. Ridgway alludes, in his description of *stoneyi*, to the "brownner" appearance of certain Alaskan skins, but considers it merely a seasonal variation. With these skins now before me I find the average color of specimens from the habitat of *evura* is almost identical with that of *hudsonicus* at the same season and would call *evura* a large and much brownner *hudsonicus*, intermediate between *hudsonicus* and *columbianus*.

Average measurements of 14 adults:—Wing, 65.4 mm. (60 to 70); tail 65 (61 to 68); tarsus, 16.8 (16.5 to 17); bill from nostril 7.2 (6.7 to 8).

Specimens and localities:—Fort Simpson, Mackenzie River, 3; "Fort Rae," Mackenzie District (?) 2; Fort Yukon, Alaska, 2; Nulato, Alaska, 5; Fort Kenai, Alaska, 2.

5. *Parus hudsonicus columbianus* Rhoads. COLUMBIAN CHICKADEE.

HABITAT.—Rocky Mountains, from the Liard River south into Montana.

Little may be added to the original description of this subspecies. Two additional specimens secured in 1889 in British Columbia have been kindly loaned by Prof. J. Macoun of the Canadian Geological Survey. They confirm the characters assigned to the type specimens, and are of special interest as having been taken respectively on the Gold and Selkirk Ranges, nearly one hundred miles south and west of the central Rockies at Field.

Another specimen of *columbianus*, no less typical, was taken by Mr. G. B. Grinnell in 1888 at St. Mary's Lakes in the Rocky Mountains, a few miles south of the northern boundary of Montana. Besides the absence of any decided shade of brown on upper parts, throat and loreal region noticeable in fall specimens of all the other forms, *columbianus* has a longer, much heavier and thicker bill than any of them, that member being nearly twice the calibre of smaller *hudsonicus*.

While *columbianus* may be classed as the greatest remove in the direction of specific separation from *hudsonicus*, I feel no hesitation in classing it, with the others, as nothing more than a subspecies of Forster's type.

Average measurements of 7 adults.—Wing, 67 mm. (65 to 71); tail, 66 (64 to 69); tarsus, 17 (16.5 to 17.5); bill from nostril, 7.6 (7.3 to 8.3).

Specimens and localities.—Field, British Columbia, 4; Eagle Pass, B. C., 1; Toad Mountain, B. C., 1; St. Mary's Lakes Montana, 1.

TABLE OF MEASUREMENTS¹ OF THE *Parus hudsonicus* GROUP.

Skins		Wing	Tail	Tarsus	Bill, from nostril
30	<i>Parus hudsonicus</i>	58-64 (61)	58-64 (60)	15.5-16.5 (16)	6.5-7.5 (7)
15	<i>Parus hudsonicus</i>	63-68 (65.3)	63-68 (65)	16 -16.5 (16.2)	6.5-7.5 (7)
	<i>angava</i>				
2	<i>Parus hudsonicus</i>	62-66 (64)	64-68 (66)	16 -16.5 (16.3)	7 -7.2 (7.1)
	<i>stoneyi</i>				
14	<i>Parus hudsonicus</i>	60-70 (65.4)	61-68 (65)	16.5-17 (16.8)	6.7-8 (7.2)
	<i>evura</i>				
7	<i>Parus hudsonicus</i>	65-71 (67)	64-69 (66)	16.5-17.5 (17)	7.3-8.3 (7.6)
	<i>columbianus</i>				

¹ Measurements in millimetres.

TABLE SHOWING PARALLEL GEOGRAPHIC VARIATIONS IN CERTAIN
BIRD RACES OF NORTHERN NORTH AMERICA.

Hudso- Canadian	Barren Ground	Alaskan- Arctic	Alaskan	Northern Rocky Mountains
Size smallest; color light.	Size large; color dark.	Size large; color lightest.	Size larger; color intermediate.	Size largest; color darkest.
Parus hud- sonicus	P. h. ungava	P. h. stoneyi	P. h. evura	P. h. columbianus
Picoides americanus	Picoides, subsp?	(Absent)	P. a. alascensis	P. a. dorsalis
Acanthis li- naria	A. l. rostrata	A. l. holbecllii		(Non-resident)
Lagopus ru- pestris	L. r. reinhardti	L. r. nelsoni et athkensis		Lagopus, subsp?
Otocoris alpestris		O. a. leucolæma		O. a. merrilli

earlier part of the year. Newman gives September as its regular time of appearance. Yet many females of this species, at their regular time of appearance, are found destitute of ova, and the inevitable consequence is its rarity, and possibly its dying out, at least in England, unless (as intimated by Dr. Wallace) it is kept up by fresh specimens flying over from abroad. There is another cause of the rarity of some species, but its mode of operation is difficult to discover. Sometimes the introduction of an insect from another country, if it become abundant in its new *habitat*, will affect injuriously a native species, generally one allied to the species introduced. It is the general opinion of entomologists in the Province of Quebec, that since the acclimatization of *Pteris rapae*, the native *Pteris oleracea* has become scarce. The newcomer seems in some mysterious way to have usurped the place of the other species, and driven it away from places where formerly it was abundant. How this has been accomplished, however, we cannot tell.

G. J. BOWLES.

Chamaea
 THE HUDSONIAN CHICKADEE.

(Parus Hudsonicus.)

The true home of the Hudson Bay Tit, as this species is generally called, is in the more northern parts of the continent, in Labrador and the Hudson Bay region, with a range in those latitudes from the Atlantic to the Pacific; though at the east it is met with much farther south than in the middle or western sections. It is a resident of Nova Scotia and New Brunswick, breeding in both Provinces, where, though not abundant, it is far too common to be called rare, though it is more frequently met in winter than at other seasons. According to Mr. Everett Smith it is a common resident of the interior eastern and northern portion of Maine. Mr. Harry Merrill writes me that he has not known it to occur near Bangor, nor is it given in Mr. Nathan C. Brown's catalogue of Portland species, but there are records of a few being taken in New Hampshire, Massachusetts, and Connecticut. Mr. LeMoine in *Les Oiseaux du Canada* mentions it as a rare species (*plus rare en Canada*), and it certainly is along the entire southern section of the western Provinces, for Mr. Wintle does not appear to have found it near Montreal, nor is the name in the Saunders-Morden list, nor in Mr. McIlwraith's old list of Hamilton

species. Professor Macoun has not placed it in his partial list of Belleville birds, nor did he find the bird in the Grand Valley of the Assiniboine. It is not given in the catalogue of the Ottawa Field Naturalists' Club, though in the copy before me the name has been penned in by one of the members in place of *rufescens*, the latter being an obvious error as that species was discovered by Townsend on the Columbia River, and it has never been taken north or east of that region. But this is an error easily made unless the *habitat* of the two species is considered, their plumage being similar.

Of the eighteen species of the *Paridae* found in North America the most widely distributed and the best known is the Black-capped (*P. atricapillus*), the type species of the family. This bird is found in all suitable localities along the southern borders of the Dominion (as well as much further south) from the Atlantic to Manitoba. In the latter Province and across the Plains to the Rockies it is replaced by *septentrionalis*, which Mr. Ridgway says "may be looked upon as simply a long-tailed western variety of the common species." Beyond the Rockies this is again replaced by still another variety, named by Baird *occidentalis*. Of the Hudson Bay Tit no variation in the western specimens has as yet been recorded. But it is in form and coloration, only that the species of the family exhibit any marked differences, for no matter what name they bear, nor where they make their homes, you will find them the same restless, merry, sociable pygmies with all the familiar habits of the Black-cap. Their songs also bear a strong general resemblance—if the jingling chant in which they carol their joy can be called a song—for whether the singer be he of the black tuft whose voice is heard on the banks of the Rio Grande; or *Carolinensis*, who helps to swell the chorus which comes up from "the Land of Dixie;" or our own brown-capped hero, whose tiny throats fling a welcome to the sun as its light breaks upon the hills of the far north, or be he whatever member of this family he may, the theme of his song is much the same jantay *tea-dee-dee* as rings through our Canadian woods the whole year long. The song of the Black-capped and the Hudsonian are especially similar, and their general appearance and their manners in the field, particularly the latter, are so alike as to make their exact identification rather difficult; yet even in

their actions and their numerous notes there is a difference, though I confess it is not easily defined, but after some study their identification becomes unquestionable. In the northern bird the crown of black edged with white, so conspicuous in the congener, is replaced by a crown of rich brown edged with ashy; the throat also is brown, and the entire upper parts are more brown than ashy. Then the head does not appear so round, so much like a ball of down as the Black-cap's does, and the whole plumage partakes less of the fluffy character. The feathers appear firmer and set closer to the body giving the bird, in a slight degree, a trimmer and more warbler-like look. And just as this additional stiffness in the contour feathers increases the dignity of the bird's appearance so does a slight stiffness in his movements add to the dignity of the bird's manners—if dignity is at all applicable to a bird who will persist in hanging to a limb with his head downwards and acting otherwise like a romp-loving school boy just after a circus has passed his way. For like all the race the Hudsonian lives principally on the eggs and larvae of insects, which it finds in the crevices of the bark of trees, and in hunting after these it performs a variety of amusing and wonderful gymnastic feats, though I have never seen one attempt to climb the trunk of a tree as do their next of kin, the creepers. But in all these movements this species exhibits just a little less of that rollicking style—that free abandon which is so pronounced in the antics of the Black-cap. And in the songs of the two you can trace a difference of a somewhat similar character; that of the Hudsonian lacks the extreme sweetness and smoothness of its cousin. The voice is harsher and the syllables are delivered more distinctly and more deliberately. But with all their efforts to affect boarding-school airs they must be rather genial fellows, for in the autumn and winter troops of six or eight are met together and generally in company with as many Black-caps and a small contingent of Kinglets. Tree Sparrows sometimes join the party, and but a few days ago I met such a troop "doing" the rounds of the trees in one of the public squares of this city with a pair of Downy Woodpeckers following close in their rear.

The Hudsonians chatter away as they hunt for their food from branch to branch and tree to tree, but they do not always sing their full song; more frequently the first note heard

from an advancing flock is something like *tsay-day-day*, the last syllables rather lengthened or a sharper, quicker *te-teet-chee-chee*, and occasionally a guttural *tee-pu-pu-pu*. They have numerous other minor notes with which they fill in the intervals, and one, which they use chiefly when resting under the cover of heavy evergreen foliage, in such places as they select for sleep, is like the thin *tsip* of a Kinglet. While on their foraging expeditions, and indeed at all times, they exhibit no symptoms of shyness and appear quite indifferent to the presence of mankind, occasionally pausing to gaze at an inquisitive intruder with a comical "who-are-you-looking-at?" air, and probably following this by some performance around a limb, as if to show off their athletic capabilities.

In the spring these gay companions separate, each taking a mate, and starting boldly into housekeeping affairs. It has been stated that the Hudsonian Chickadee selects a deep forest for the site of its nest, and this may be the general rule, but of the four nests that I have seen neither were placed in any such seclusion. The one most carefully hid away was in a rather thick swamp, but was quite close to the outskirts of a village and within a hundred yards of a much used highway; two of the others were in open pastures through which children played daily; while the fourth was in a telegraph post within a hundred yards or so of a railway station. During last season I was enabled to examine two nests of this species before they were removed from their original positions, one of these was found near Edmundston, not far from the Quebec border, by Mr. H. A. Purdie, of the Nuttall Club, Cambridge, and the other was discovered by Mr. James W. Banks within an hour's walk of this city. These two nests were so nearly alike both in position and construction that a description of one will apply equally well to either. They were placed in decayed and weather-beaten stumps (apparently spruce or fir), some three feet high and five inches in diameter, but unlike the Black-cap, who makes an entrance from the side, these builders had entered the stump from the top, beginning with a hole of about two inches diameter, which size was maintained for some six or eight inches, when it was increased gradually to about three inches, and this width was continued to the base of the excavation some twelve to fourteen inches from the top. At the bottom of this cavity, under the nest proper,

were two mats or platforms. The first or lowest of these, which was about one inch and a half thick, was composed of dry moss firmly packed, and upon this was placed another such mat made of the inner fur of the common hare, firmly felted into a compact mass. Upon this latter rested the cup-shaped nest made of the same felted fur and of such precise and graceful form as to have been no discredit to a more cultured artist. The walls of the nest were two and one-half inches high and half an inch thick. There was no other material used as a lining, but the interior had a soft woolly surface not observable on the outside of the walls. There were five young in one nest and six in the other, and both broods were in much the same stage of development, although the Edmundston nest was seen on June 14th, and the St. John nest on July 1. It has not been my good fortune to see the eggs of this species, but Mr. H. B. Bailey, of the Linnean Society of New York, who took several nests at Steviacke, in Nova Scotia, during June, 1881, told me that the eggs differed but very slightly from those of the Black-capped. They are much the same size and shape, perhaps a shade smaller, but with the same white ground and irregular brownish-red and pinkish markings. I have seen it stated that they lay as many as eight and ten eggs, but I have never seen more than seven nor less than five young in the nests that I have examined. With all their reckless rollicking ways the Hudson Bay Tits make most devoted husbands and fathers, and though generally in a merry mood can be fierce when occasions demands and are always bold and courageous, as many an intrusive rodent and feathered egg thief has discovered; yet I have seen nothing in their actions to indicate the probability of the family fights noted by Wilson, nor of the display of fierce temper when despoiling their nests that has been mentioned by Audubon, Dr. Brewer and others, and I have had some opportunity to observe the latter. For example, my friend Purdie is kind and tender-hearted to a fault, and when he saw that his Hudsonian nest was filled with young he shrank from any unnecessary sacrifice of bird-life; but he is an enthusiastic collector, and he wanted that nest. After consulting, we determined to open the stump, take out the nest and replace it with one made of cotton-wool. This was successfully accomplished, but between our desire not to injure the nest, and the stubbornness of the stump, there was considerable time absorbed in the

operation; and all this time the parent birds hovered about us with a patient submission to the inevitable that was almost sublime. Their movements had lost the merry reckless dash so characteristic of their race, and while they passed fearlessly from bough to bough close around us, watching us with intense interest, they uttered only a few anxious notes and maintained a calm and dignified bearing that was unimpeachable.

MONTAGUE CHAMBERLAIN.

St. John, N. B.

BIRDS OF WESTERN ONTARIO.

SIR,—I have been very much interested in the January number of your paper and really delighted with the ornithological contributions it contains, but more particularly with the correspondence of Mr. McIlwraith of Hamilton, containing some careful criticisms on the list of birds of Western Ontario, given by Mr. W. E. Saunders and myself. Concerning the wintering of *Regulus calendula* in Ontario, I can say but very little, as I did not positively observe it myself; I never hunt much among the evergreens along the Thames, where it is said to winter. The Great Northern Shrike (*Lanius borealis*) is scarce here in winter, but sometimes it is common in October, remaining until after the first storms of snow, when they generally disappear. I have seen only one specimen of the species this winter, that was early in November, before all the black snowbirds and tree sparrows had departed. One of the last named, the shrike was pursuing when I observed it. I have never met with the adult of this species in summer, but in the month of August, 1880, a young man brought me a Marsh Hawk (*Circus hudsonius*), which I bought and asked him to procure others for me. In a few days, the same party brought me five young of *L. borealis* which were reared near where he lived. Their plumage contained many pin feathers, consequently I did not preserve them, but their large size and breast markings were, in my opinion, unmistakable proof of the species. I was told the parent shrikes were very shy and a few weeks previous had killed some very young chickens belonging to a farmer near by.

JOHN H. MORDEN.

Hyde Park, Ont.

NOTES ON THE BREEDING OF THE
RED-HEADED DUCK AT LAKE
ST. CLAIR.

Some of your readers are perhaps aware that during the spring of 1882, Mr. Herbert Keays and the writer were collecting specimens of natural history at Mitchell's Bay, Ontario. Perhaps some of the readers of this article may have enjoyed themselves at the little village of this name, as it is the resort of numerous sportsmen during the shooting season. For the benefit of those who may not have visited the spot, I will give a brief description of the localities in which we collected the specimens I intend to describe. The village is situated about half a mile from the shore, and at about the same distance inland, is a dense forest composed chiefly of elm and other soft wood trees. Here the surface of the ground is not more than three or four feet above the level of the bay, but sloping gradually to the water's edge. On the north and south of the village the marsh extends much further from the forests verge and partly encloses the body of water known as "Mitchell's Bay," which is about four miles in extent each way and very shallow, being not more than ten feet deep anywhere. The southern projection of marsh is called "Big Point Preserve," the northern boundary of the bay, "Mud Creek Preserve," and extends to the "Sny" as the outlet of Sydenham River is called. The marsh beyond the river called "St. Ann's Island," is an Indian Reserve, but is now leased and held as a game preserve by a club of sportsmen. Scarcely any part of this island or the adjoining marsh are much above the level of the water, and wherever the water does not form ponds, bays or channels, wild rice, coarse grasses and rushes cover the flats in freshest green. Amid the wiry grass, wild pea vines twine and bloom and the surfaces of the shallower pools are covered with the leaves of lilies and other aquatic plants. During our stay in this place we lived in a scow belonging to Dr. Garnier of Lucknow, to whom I am greatly indebted for many favours. My stay in this delightful spot will ever be dear to memory; sitting at my work—at early lamp-light—listening to the water-fowl and the splashing of the waves against our scow. No lover of nature could visit this spot during the month of May or June without being impressed by its beauties, and to us it was a collectors paradise. There was not a moment of the day

when the lively notes of some bird could not be heard, and sometimes the noise was astonishing; in the evening, when the sun was sinking out of sight, perhaps a loon would start its wailing cry and apparently, at once, every feathered inhabitant of the marsh would join with their own peculiar notes, but the Florida Gallinule, *Gallinula galatea*, was by far the most vociferous. Those who have never heard such an uproar can scarcely understand a written description. Imagine the music that would be made by hundreds of gallinules yelling on every side; the quacking of ducks, piping of rails, crying of loons and the indescribable notes of hundreds of marsh wrens, coots and grebes; the croaking of thousands of bull-frogs to say nothing of the hum of myriads of mosquitoes, and we find a din unparalleled. The first nests and eggs I shall describe are those of the Red-headed Duck (*Aethya Americana*). Early on the morning of May 27th, we started in a canoe to the southern extremity of St. Ann's Island in search of nests. Mr. Keays was wading in water too shallow to pole the canoe in; I paddled about until we took nest after nest of coots, gallinules, grebes, black terns, red-wings, rails &c. A female red-head was then observed by my friend, swimming quietly away among the reeds; he immediately started to search for the nest, which he knew must be near; a few minutes later, my ears were saluted by a shout that clearly indicated success. I lost no time in reaching the place and found him stooping over the nest and handling the eggs in a perfect ecstasy of delight. The nest was placed in six or eight inches of water, among coarse grass and flags, and was composed of those weeds of the previous year, very bulky, being about sixteen inches in depth and diameter; it was built abruptly out of the water, except on one side which had a regular slant of about a yard in length and which led to a passage among the weeds going to the open water. The internal diameter of nest at top was nine inches and the depth five inches. The eggs, ten in number, were of a bluish drab colour; they were uncovered when found, and in an advanced state of incubation; they varied in size, measuring thus, $1\frac{3}{4} \times 2\frac{2}{3}$, $1\frac{1}{4} \times 2\frac{1}{2}$, $1\frac{1}{2} \times 2\frac{1}{2}$, $1\frac{1}{2} \times 2\frac{1}{2}$, $1\frac{1}{2} \times 2\frac{1}{2}$. While we were taking the eggs, the female duck came twice and flew around us, and when we were a little distance from the place she alighted in the pond and swam rapidly to the nest; we again approached, when she took wing and in a few

Winter Birds at Newton Highlands
Mass.

Dec

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1916 Acadian Chickadee (Penthestes
hudsonicus littoralis)

Mrs George H. Millen

Auk XXIX Jan. 1917. p. 92-93.

Acadian Chickadee at Rhinebeck, N. Y.—On November 6, 1916, I observed an Acadian Chickadee (*Penthestes hudsonicus littoralis*) for several minutes feeding within seven feet of me among dead aster-tops. It was accompanied by several Black-capped Chickadees, but appeared tamer and entirely at ease.

This is the first visit from the species since the winter of 1913-14, when several were observed in Dutchess County. The earliest noted in 1913 appeared on November 27 and, so far as I know, this year's visitor establishes an early record for this latitude, barely ninety miles north of New York City.—MAUNSELL S. CROSBY, *Rhinebeck, N. Y.*

Arch XXXIV, Jan. 1917, p. 91.

The Acadian Chickadee on Long Island.—On November 13, 1916, an Acadian Chickadee (*Penthestes hudsonicus littoralis*) was seen at Hewlett, Long Island. I do not report the occurrence on my own personal observation but on that of my daughter, thirteen years of age, who did not know the bird; nevertheless I make myself responsible for the record which, as will be seen, is quite free from the possibility of error. It rests primarily on the account of a competent observer who is alive to the moral necessity of accuracy in bird matters and apprehends perfectly the impassable difference between *might be* and *is* in the determination of a bird's identity.

The Acadian Chickadee was in the shrubbery bordering Willow Pond in Hewlett Park associating, but not intimately, with Black-capped Chickadees and Kinglets and finally descending alone to bathe at the shore of the lake. Watching it the observer suddenly became mystified and excited. - it was not a Black-capped Chickadee! What then could it be? The momentary impression was of a "Chickadee with something missing, like a person lacking an arm or a leg." What was wanting was quickly discovered to be the black cap, the top of the head being dull brown, scarcely darker in shade than the brownish back, and at strong contrast with the black throat; the wings were darker than those of the Black-capped Chickadee, and the sides below the wings were dark chestnut brown even deeper in color than the underparts of a Red-breasted Nuthatch. All this, related to me, left nothing to be asked for in the way of description. But there was further confirmation. The bird's notes were not at all those of the Black-capped Chickadee, and a description and imitation of them were quite realistic, enough to send my memory back to the first and only Acadian Chickadee that I had ever met with. This was near Lake Terror in the Adirondacks in company with Dr. C. Hart Merriam, October 31, 1882, when the very distinctive notes of the bird were what alone drew attention to it. The specimen is still in my collection and was instantly recognized by my daughter as being nearly identical with the bird she had so carefully studied in life the same afternoon.

The species has not before been reported from Long Island or the vicinity of New York, nor from further south, I think, than Poughkeepsie on the Hudson (Bird-Lore, XVI: 448-449, Maunsell S. Crosby).

It seems well to give early announcement of this occurrence that other observers near New York may be put on watch. The early date of the bird's appearance seems to hint that the species may be repeating the southward migration that has excited so much attention in recent winters, and that the movement is progressive and has this year reached a more southern point than at any time before.—EUGENE P. BICKNELL, *New York City.*

Arch, XXXIV, Jan. 1917, p. 91-92.