

LECONTE'S SPARROW BREEDING IN MICHIGAN
AND SOUTH DAKOTA

BY LAWRENCE H. WALKINSHAW

Plates 21, 22

LATHAM first described Leconte's Sparrow (*Passerherbulus caudacutus*) from the interior of Georgia in 1790 (1). On May 24, 1843, Audubon (2) collected a specimen along the upper Missouri, but it was nearly thirty years before another specimen was taken (in 1872) by Dr. Lincecum in Washington County, Texas (3). The following year, 1873, Dr. Coues (4) took five specimens on August 9, between the Turtle Mountains and the Mouse or Souris River in North Dakota, and a sixth on September 9, at Long Coteau River, North Dakota. Since that time many ornithologists have covered the favorite habitat of the species, and its breeding range and winter distribution have been gradually discovered.

The A. O. U. Check-list of 1886 gave the range as "From the plains eastward to Illinois, So. Carolina, and Florida, and from Manitoba south to Texas" (5). The 1931 Check-list (6) states: "Breeds in the Canadian and Transition zones from Great Slave Lake, Mackenzie, southern Saskatchewan, and Manitoba southward to North Dakota and southern Minnesota. Winters from southern Kansas, southern Missouri, and western Tennessee to Texas, Florida, and the coast of South Carolina, and occasionally to North Carolina. Casual in Ontario, Illinois and New York; accidental in Idaho, Utah and Colorado."

In Canada the species has been found breeding in the eastern part of Alberta (7, 8, 9, 10). I found it on June 17, 1936, along the western shores of Buffalo Lake only a few miles from Bashaw in central Alberta. On a visit to this area on June 20, an undoubted nest of the species was found, but heavy rains, which preceded these visits, had flooded the entire area and destroyed all of the ground nests in the region. It has also been found breeding in southern Saskatchewan (8, 9, 11, 12) and southern Manitoba (8, 13, 14, 15, 16). Specimens have been taken as far as Hay River to the northwest, on the southwestern shores of Great Slave Lake (17) and at the mouth of the Athabasca River in northeastern Alberta (17) and in the Battle River region of central Alberta (18) during the summer months, where it undoubtedly breeds. There are two records from Ontario, north of Lake Superior, during the summer months (19, 20). In the United States, the species has been found breeding in North Dakota (21, 22), South Dakota (23), Minnesota (24, 25), twice in northern Illinois (26, 27) (eggs, without adults or photographs) and now in the extreme eastern part of the Upper



LECONTE'S SPARROW AT THE NEST

Peninsula of Michigan. There is a sight record from Montana (Billings) (28) but there are no summer records from Wisconsin (29, 30).

The South Dakota breeding record, so far as I can find, has never been published. Among the many letters written, one reply received from Professor W. H. Over, of the Museum of Zoology, University of South Dakota, stated that there was in their collection one set of four eggs taken in Miner County, South Dakota, June 1890 (no date of month on specimens), and that the card showed that the female was shot. The nest was concealed in high grass on marshy ground and was collected by Frank A. Patton. In a more recent letter Professor Over states that Patton found another nest a few years before his death but these specimens cannot now be found. Another record from South Dakota yet without specimens was made by Agersborg in 1883 (31).

BREEDING IN MICHIGAN

Because of its secretive actions and unimpressive, insect-like song this sparrow probably has been overlooked in many regions where it may be more or less common. During May, 1934, it was found and a male and female were taken at Munuscong State Park in Chippewa County, Michigan (32). While visiting this area in June, 1934, I found Leconte's Sparrow to be one of the common sparrows about the drier border of the marsh. My observations during the few days spent there were as follows: June 8, one; June 9, five; June 10, two; June 11, two; June 12, eight; June 13, five and a nest with two eggs which probably belonged to this species, but were deserted by the parent before I could collect it; June 14, five (one male collected) and June 15, two; thus an average of nearly four birds observed per day. On a visit to the region September 1 and 2, 1934, I was unable to locate the species but since the birds are so hard to flush it is possible that they were still there.

On a visit to the same area during June, 1935, I did not intend to study the Leconte's Sparrow, but rather the Yellow Rail (*Coturnicops noveboracensis*) which had been found nesting there (Gillett, Francis C., June 13, 1934). After several days spent in extensive search with a dog during which no rails were to be found or heard, I decided to study Virginia Rails (*Rallus limicola limicola*) and Leconte's Sparrow. My observations of the sparrow for 1935 were as follows: June 2, one; June 3, five; June 4, four and nest with five eggs; June 5, three; June 6, ten; June 13, one; June 14, seven and questionable nest with five eggs; June 15, eight; June 16, five; June 17, six; June 20, one; and June 21, five (one male collected). In addition to these, I observed two singing males on June 12 one hundred miles to the west on the Seney marshes north of Germfask, Schoolcraft County, while searching for a nest of the Sandhill Crane (*Grus canadensis tabida*). Three more birds

were located at this same place on June 19, but I was unable to collect any, even though I spent a good many hours in a drenching rain pacing back and forth waiting for the spasmodic, insect-like song to aid in finding the birds. If one were found, by the time I approached near enough, the singer had disappeared beneath the rank vegetation; nor was I able later to flush the bird. It was so cold that the birds were not singing so frequently as on ordinary days but only once or twice in half an hour's time. It seems logical that one should find Leconte's Sparrow on these marshes throughout the Upper Peninsula, where the habitat is grass- or sedge-covered and willow-dotted, since it has been located in the extreme eastern part of the peninsula.

Unlike the habitat of fine grasses and sedges, noted by most observers, that at Munuscong Bay, where the sparrow was not uncommon during the summer months, was the drier border of a rush-grown marsh, where the most conspicuous plant was *Scirpus validus* (Vahl). During June, the marsh growth consisted almost entirely of this rush; masses of old dead rushes strewed the ground as the past seasons had left them, with new stalks protruding from these masses. Intermixed with these were many little willows, mostly about one or two feet in height. At Buffalo Lake, Bashaw, Alberta, a very similar rush was the dominant plant but there were no willows of any size on the entire area. In small bunches among the *Scirpus validus* at Munuscong, were to be found some small sedges and additional plants, including *Carex prairie* Dewey, *Elcocharis palustris* (L.) R. and S., *Sium cicutaefolium* Schrank, *Mentha arvensis* L., var. *canadensis* (L.) Briquet, *Lycopus americanus* Michx. and *Aster patens* Ait. in this particular border inhabited by Leconte's Sparrow (plants analyzed at the Herbarium, University of Michigan). This area, only eight or ten years previously, was covered with water to a depth of several feet. It is bordered by tall, dense grasses, which come to a definite sharp end where probably the shore line stood during the period of higher water. In this grass-grown area the Short-billed Marsh Wren (*Cistothorus stellaris*) and the Blue-winged Teal (*Querquedula discors*) were found nesting. Then approaching the bay in the area of fallen dead rushes with its numerous small willows, where the Leconte's Sparrow was found, occurred also the Spotted Sandpiper (*Actitis macularia*), Wilson's Snipe (*Capella delicata*) and the Savannah Sparrow (*Passerculus sandwichensis savanna*). The Yellow Rail (*Coturnicops noveboracensis*) was found at the extreme outer edge of this area in 1934. Toward the river the water covered the entire area, gradually becoming deeper. Here were found the American Bittern (*Botaurus lentiginosus*), Virginia Rail (*Rallus limicola limicola*), Sora (*Porzana carolina*) and the Red-winged Blackbird (*Agelaius p. phoeniceus*). Still farther out were found the Pied-billed Grebe (*Podilymbus p. podiceps*) and the Coot (*Fulica americana*).

The weights of three adult Michigan specimens (Univ. of Michigan Mus. of Zool., 73733, 73734 and 84613) were respectively:—

Female, May 12, 1934 (T. D. Hinshaw).....	13.1 grams
Male, May 11, 1934 (R. E. Olsen).....	12.3 grams
Male, June 21, 1935 (L. H. W.).....	12.8 grams

This gives an average 12.7 grams. The only other Michigan specimens, at that time,—male, June 14, 1934 (L. H. W.), Univ. of Michigan, 84614, and male, July 29, 1934 (M. M. Peet), the last in Dr. Peet's collection,—were not weighed.

NESTING ACTIVITIES

During the many hours spent in the blind, at no time did I observe what I considered the male at the nest, whether incubating, feeding or brooding. He was always singing in the neighborhood and would occasionally fly over the blind, uttering a low call.

The female incubated, facing either to the north or to the south, the direction in which the rushes extended over the nest. Since the markings on the back extend along the length, this produced a closer harmony with the rushes.

A few of the notes taken at the blind are as follows:—

June 5, 2 p. m., entered blind. 2.10 p. m., adult could be heard coming through the rushes, and at last came into sight only three feet away, moving mouse-like up from underneath the vegetation on to the nest. She was very nervous, leaving and returning several times before settling down on the eggs. When sitting on the nest, she was so far down that she could barely be seen. She left the nest several times during the afternoon so that about twenty exposures were made, nor did she pay the least attention to any of the noises made in camera operation inside the blind.

The male sang only four times between 2 and 3 p. m., then once at 3.05, after which he was not heard again until 4.10, just as I was leaving the blind. Bobolinks sang all around the blind, two snipes winnowed overhead and continued long after dark. A pair of Killdeers tried to lead a thieving Crow from the neighborhood of their young which I had found the previous day only a short distance away. The adult Leconte's Sparrows seemed interested in this same Crow and left the nest with the eggs exposed, returning soon after the Crow had gone. Savannah Sparrows were singing nearer the edge of the marsh.

The female almost invariably sat with her body in the direction the rushes extended, thus making her markings resemble them so closely that one would think she were part of the group. She always moved about when settling on the eggs and occasionally turned them with her bill.

3.20 p. m., rain; she left nest at 3.28 and did not return until 3.45.

were located at this same place on June 19, but I was unable to collect any, even though I spent a good many hours in a drenching rain pacing back and forth waiting for the spasmodic, insect-like song to aid in finding the birds. If one were found, by the time I approached near enough, the singer had disappeared beneath the rank vegetation; nor was I able later to flush the bird. It was so cold that the birds were not singing so frequently as on ordinary days but only once or twice in half an hour's time. It seems logical that one should find Leconte's Sparrow on these marshes throughout the Upper Peninsula, where the habitat is grass- or sedge-covered and willow-dotted, since it has been located in the extreme eastern part of the peninsula.

Unlike the habitat of fine grasses and sedges, noted by most observers, that at Munuscong Bay, where the sparrow was not uncommon during the summer months, was the drier border of a rush-grown marsh, where the most conspicuous plant was *Scirpus validus* (Vahl). During June, the marsh growth consisted almost entirely of this rush; masses of old dead rushes strewed the ground as the past seasons had left them, with new stalks protruding from these masses. Intermixed with these were many little willows, mostly about one or two feet in height. At Buffalo Lake, Bashaw, Alberta, a very similar rush was the dominant plant but there were no willows of any size on the entire area. In small bunches among the *Scirpus validus* at Munuscong, were to be found some small sedges and additional plants, including *Carex prairie* Dewey, *Eleocharis palustris* (L.) R. and S., *Sium cicutaefolium* Schrank, *Mentha arvensis* L., var. *canadensis* (L.) Briquet, *Lycopus americanus* Michx. and *Aster patens* Ait. in this particular border inhabited by Leconte's Sparrow (plants analyzed at the Herbarium, University of Michigan). This area, only eight or ten years previously, was covered with water to a depth of several feet. It is bordered by tall, dense grasses, which come to a definite sharp end where probably the shore line stood during the period of higher water. In this grass-grown area the Short-billed Marsh Wren (*Cistothorus stellaris*) and the Blue-winged Teal (*Querquedula discors*) were found nesting. Then approaching the bay in the area of fallen dead rushes with its numerous small willows, where the Leconte's Sparrow was found, occurred also the Spotted Sandpiper (*Actitis macularia*), Wilson's Snipe (*Capella delicata*) and the Savannah Sparrow (*Passerculus sandwichensis savanna*). The Yellow Rail (*Coturnicops noveboracensis*) was found at the extreme outer edge of this area in 1934. Toward the river the water covered the entire area, gradually becoming deeper. Here were found the American Bittern (*Botaurus lentiginosus*), Virginia Rail (*Rallus limicola limicola*), Sora (*Porzana carolina*) and the Red-winged Blackbird (*Agelaius p. phoeniceus*). Still farther out were found the Pied-billed Grebe (*Podilymbus p. podiceps*) and the Coot (*Fulica americana*).

The weights of three adult Michigan specimens (Univ. of Michigan Mus. of Zool., 73733, 73734 and 84613) were respectively:—

Female, May 12, 1934 (T. D. Hinshaw).....	13.1 grams
Male, May 11, 1934 (R. E. Olsen).....	12.3 grams
Male, June 21, 1935 (L. H. W.).....	12.8 grams

This gives an average 12.7 grams. The only other Michigan specimens, at that time,—male, June 14, 1934 (L. H. W.), Univ. of Michigan, 84614, and male, July 29, 1934 (M. M. Peet), the last in Dr. Peet's collection,—were not weighed.

NESTING ACTIVITIES

During the many hours spent in the blind, at no time did I observe what I considered the male at the nest, whether incubating, feeding or brooding. He was always singing in the neighborhood and would occasionally fly over the blind, uttering a low call.

The female incubated, facing either to the north or to the south, the direction in which the rushes extended over the nest. Since the markings on the back extend along the length, this produced a closer harmony with the rushes.

A few of the notes taken at the blind are as follows:—

June 5, 2 p. m., entered blind. 2.10 p. m., adult could be heard coming through the rushes, and at last came into sight only three feet away, moving mouse-like up from underneath the vegetation on to the nest. She was very nervous, leaving and returning several times before settling down on the eggs. When sitting on the nest, she was so far down that she could barely be seen. She left the nest several times during the afternoon so that about twenty exposures were made, nor did she pay the least attention to any of the noises made in camera operation inside the blind.

The male sang only four times between 2 and 3 p. m., then once at 3.05, after which he was not heard again until 4.10, just as I was leaving the blind. Bobolinks sang all around the blind, two snipes winnowed overhead and continued long after dark. A pair of Killdeers tried to lead a thieving Crow from the neighborhood of their young which I had found the previous day only a short distance away. The adult Leconte's Sparrows seemed interested in this same Crow and left the nest with the eggs exposed, returning soon after the Crow had gone. Savannah Sparrows were singing nearer the edge of the marsh.

The female almost invariably sat with her body in the direction the rushes extended, thus making her markings resemble them so closely that one would think she were part of the group. She always moved about when settling on the eggs and occasionally turned them with her bill.

3.20 p. m., rain; she left nest at 3.28 and did not return until 3.45.

At 4.10 p. m., I covered the open spot toward the blind and left her to the task of incubation. The thermometer registered down in the forties that afternoon.

June 17, 1935, 11.15 a. m., entered blind; female did not return for twenty minutes. Male started singing near the blind (200 feet). Female fed young twice during the next twenty minutes, then again at 11.55 when she brooded them.

12 m., as the male was singing, I was surprised to hear the female suddenly burst forth with a loud *chit-chit-t-t-t-t*. Her bill opened and closed rapidly as she did this.

12.05 p. m., female left the nest.

12.08 p. m., female returned without food; left almost immediately.

12.12 p. m., female fed young some small insect; brooded.

12.25 p. m., female left the nest; immediately returned and brooded.

12.38 p. m., female left to return immediately and feed young; removed excrement and swallowed it; brooded. Male singing.

12.45 p. m., she walked around the blind inspecting it; returned at

12.47 p. m., brooded. A few minutes later a Savannah Sparrow landed on the blind and sang; she raised her head and nervously glanced in that direction but did not leave.

12.55 p. m., female dashed out a few feet and caught an insect which she fed one of the young; brooded.

1.00 p. m., just an hour to the minute, she repeated the same song *chit-chit-t-t-t*, as the male sang about a hundred yards distant; she left the nest a few seconds later. Young edged over out of the sun into a shady part of the nest, even though it was a very cool day. (Ordinarily there would have been little light to reach them but I had exposed more than half of the nest for photography.) Female in leaving hopped along on the fallen vegetation for about twenty feet, usually underneath the topmost layer before flying. Sometimes she did not fly.

1.05 p. m., female back without food.

1.06 p. m., she left nest.

1.14 p. m., female back with small insects and fed young; removed and swallowed excrement.

1.21 p. m., female off; inspected blind; right back.

1.45 p. m., female off; walked ten yards then flew.

1.55 p. m., back and fed young some small insects.

2.16 p. m., female off; right back.

2.20 p. m., female off; ate something herself.

2.30 p. m., female off; swallowed excrement.

2.40 p. m., female off, right back; 2.46 p. m., off again; 2.48 p. m., fed young.

SONG

The song of the Leconte's Sparrow is very unimpressive, resembling more the song of some insect than that of a bird. It has been described by many authors. Seton, in 'The Birds of Manitoba' (1890, p 596) describes the song as "a tiny, husky, double note 'reese-reese', so thin a sound and so creaky that I believe it is usually attributed to a grasshopper." Roberts, in the 'Birds of Minnesota' (1932, 2: 393) gives Breckenridge's impression of the song: "The Leconte's song begins with one short, barely audible, squeaky note, followed by a fine high, insect-like buzz similar to [that of] the Grasshopper Sparrow and about one second in duration; a tiny, hardly audible 'chip' terminates the effort" (Red River Valley, June 23, 1928). Farley, in the 'Birds of the Battle River Region' (1932, p. 57) says: "Its soft lisping note, 'tze', uttered with monotonous frequency as the bird clings to a tall grass stem, sounds more like an insect than that of a bird."

The song when near at hand to me sounds like z-z-z-buzzzz, and lasts by the stop-watch 0.015 of a minute in duration, which is approximately one second as stated by Breckenridge. The first part of the song reaches its shrillest just at the close, when it can be heard for some distance. It is much higher pitched than that of the Savannah Sparrow, heard in the same wet meadows, yet the song of the Savannah lasts nearly three times as long. Often, when in the blind, another song was heard, sometimes alone, again preceding the regular insect-like buzz. This song has been described by Peabody (24) as "a dry, creaky e'elree-e'elree-e'elree-e'elree-." He adds: "This note must be rarely indulged in, as I recall having heard it but twice." It is not uttered nearly as often as the other more common song. This song resembles a similar one of the Grasshopper Sparrow (*Ammodramus savannarum australis*), and like the song of the latter, it is more often followed by the regular buzzing song.

The song, both in Michigan and Alberta, was uttered from the top or near the top of some dead rush but, if one approached, the singer disappeared so quickly that it was seldom seen. If one pressed too close, the bird suddenly darted above the rushes for a short distance, to disappear among the masses of dead *Scirpus*. Very seldom have I observed the bird utter the song more than a foot from the ground. Once, while crossing near the supposed nesting-site, a male suddenly flew into the air with quivering wings, and while maintaining a stationary position, uttered his regular song, then dropped again to the dead rushes. The procedure was much like the one often given by the Prairie Marsh Wren (*Telmatodytes palustris dissaëptus*).

Although I was not awake all of the hours of darkness, the male was heard to sing as early as 3 a. m. and as late as 10.30 p. m., long after dark here in Michigan. From my cabin door I could easily hear it. For a period



LECONTE'S SPARROW AT THE NEST

of fifteen minutes from 10 to 10.15 p. m. on June 16, 1935, I timed his songs with a stop-watch and he repeated the song at the rate of ten times per minute, excepting for one minute when it was repeated nine times. At dawn it was repeated at about this same rate. For thirty minutes between 1.45 and 2.15 p. m., on June 17, it was repeated the following number of times per minute: 7, 6, 6, 7, 2, 0, 0, 0, 0, 0, 0, 0, 0, 5, 6, 5, 0, 0, 2, 1, 0, 5, 5, 0, 7, 4, 0, 0 and 0. This was at about the regular rate for the middle of the day and one will note that the frequency was rather variable. In central Alberta the rate corresponded with that in Michigan but daylight is much longer there during the nesting season.

The alarm note was a *chip*, sometimes single, but more often double, and if one were near the nest, it became a very rapid *chip-chip-chip-chip-chip*, then repeated. This was continued until the intruder left the vicinity of the nest. Another call heard from the blind as the female approached the nest was a very low, barely audible, *z-z-zz-z*. The male uttered this same call at one time when he circled over the nest and returned to his singing perch. Then there was the song uttered twice on June 17, 1935, by the female on the nest as the male sang nearby. This song was *chit-chit-t-t-t-t* and I have heard the Grasshopper Sparrow, both male and female, utter a song almost identical at the nest in southern Michigan (July, 1935).

SUMMARY

Leconte's Sparrow in summer, is a bird of the plains, the borders of grassy or rush-grown marshes from the southern shores of Great Slave Lake in the northwest of Canada, from the wet grassy meadows of entire eastern Alberta, from southern Saskatchewan, Moose Mountain, Hudson Bay Junction and Churchill River, southward, and from southern Manitoba, Lake Winnipegosis, southward and eastward to the extreme eastern part of the Upper Peninsula of Michigan, west through Minnesota to both North and South Dakota; possibly occasional in Montana, Ontario, Wisconsin and northern Illinois.

In migration stragglers occur as far west as Idaho (33), Colorado (34, 35) and Utah (36). In the east from Ohio (37, and an October, 1936, invasion not as yet published; see this issue of 'The Auk' *postea*), southern Michigan (October, 1936, invasion same as Ohio, *postea*), Toronto, Ontario (38), and at Ithaca, New York (39). The A. O. U. Check-list of 1931 gives in full the winter range.

Summary of the bibliography up to 1900 was published in Ridgway's 'Birds of North and Middle America' (40). Cooke (41) has summarized the migration records up to 1910.

In studying a nest in northern Michigan, the incubation period was found to be at least thirteen days. The female was observed to take sole responsi-

bility during incubation, brooding and feeding. The male sang during all of the daylight hours, and a great deal during the night, singing with greater zest during the darker hours. The song is rather insect-like and in behavior the birds are rather mouse-like.

Thanks for the many answers to letters must be given to John W. Aldrich, Arthur C. Bent, Frank S. Farley, Edward R. Ford, Herbert Friedmann, Albert Ganier, O. J. Gromme, O. J. Libby, W. H. Over, James L. Peters, Russell Reid, Thomas S. Roberts, Witmer Stone, James G. Suthard, Milton Trautman, Winton Weydemeyer and Gordon Wilson. Thanks are also due to Drs. Josselyn Van Tyne and Max M. Peet for opportunity to study specimens and to Dr. Van Tyne for aid in determining the egg color as well as help in use of the library.

REFERENCES CITED

1. LATHAM, JOHN. *Index ornithologicus*, etc. 8vo, London, 1: 459, 1790.
2. AUDUBON, JOHN J. *The birds of America*. 8vo, ed. 7: 338, 1843.
3. BAIRD, S. F., BREWER, T. M., AND RIDGWAY, R. *A history of North American birds*. Land birds, 1: 552, 1874.
4. COUES, ELLIOTT. *Birds of the Northwest: a hand-book of the ornithology of the region drained by the Missouri River and its tributaries*. U. S. Geol. Surv. Terr., Misc. Publ. no. 3, p. 134, 1874.
5. A. O. U. CHECK-LIST OF NORTH AMERICAN BIRDS. 8vo, New York, p. 268, 1886.
6. A. O. U. CHECK-LIST OF NORTH AMERICAN BIRDS, ed. 4. 8vo, Lancaster, Penna., p. 337, 1931.
7. FRIEDMANN, HERBERT. Further additions to the list of birds victimized by the Cowbird. *Wilson Bull.*, 46: 111, 1934. (Nest found by A. H. Henderson in Alberta.)
8. MACOUN, JOHN, AND MACOUN, JAMES M. *Catalogue of Canadian birds*. 8vo, Dept. of Mines, Geol. Surv. Canada, Ottawa, no. 973, p. 504, 1909.
9. PETERS, JAMES L. Letter of January 21, 1936. Egg sets in Museum of Comparative Zoology are: one in general collection, no. 7065, taken by Walter Raine at Bowden Lake, Alberta, and one in the John E. Thayer collection, no. 11412, taken by Walter Raine at Crescent Lake, Assiniboia.
10. ARNOLD, EDWARD A. A short summer outing in Newfoundland, 1911. *Auk*, 29: 72, 1912. (Mentions taking eggs of Leconte's Sparrow in Alberta.)
11. MITCHELL, H. HEDLEY. *Catalogue of the birds of Saskatchewan*. Canadian Field-Nat., 38: 113, 1924.
12. FERRY, JOHN F. Birds observed in Saskatchewan during the summer of 1909. *Auk*, 27: 185-204, 1910. (Two nests at Prince Albert.)
13. SETON, ERNEST E. T. Manitoban notes. *Auk*, 2: 23, 1885. (Describes first nest of species to be found.)
14. THOMPSON, ERNEST E. (SETON). *The birds of Manitoba*. Proc. U. S. Nat. Mus., 13: 596, 1891.
15. FRIEDMANN, HERBERT. Letters, 1936, listing egg sets in U. S. Nat. Mus.: four eggs, Raeburn, Manitoba, June 6, 1894, E. Arnold; two eggs, St. Mark's Lake, Manitoba, June 12, 1894, W. Raine; two eggs, Shoal Lake, Manitoba, June 10, 1894, W. Raine; five eggs near Raeburn, Manitoba, July 21, 1893, W. Raine; five eggs, in the Bent Collection, Lake Wampegesis, Manitoba, June 2, 1923,

- F. S. Hersey; five eggs, Lake Winnipegosis, Manitoba, June 1, 1913, A. C. Bent, in the Bent Collection.
16. BENT, ARTHUR C. Letter, 1936, concerning last nest mentioned above. Female was shot leaving the nest; the skin is in the Museum of Comparative Zoölogy, Cambridge, Massachusetts.
 17. ANDERSON, R. M. Northward range of *Ammodramus lecontei*. *Auk*, **26**: 80, 1909. (May 22, 1908, specimen from delta of Athabasca River; also mentions specimen from Hay River, south shore of Great Slave Lake, June 23, 1908.)
 18. FARLEY, FRANK L. Birds of Battle River region of central Alberta. 8vo, Edmonton, Alberta, p. 57, July, 1932.
 19. KÄELZ, WALTER. Some bird records for the Lake Superior region of Ontario. *Canadian Field-Nat.*, **37**: 118, 1923. (Three specimens, 1921 and 1922, from region north and west of Lake Superior; one, July 27, 1922, young female, in University of Michigan Museum of Zoology, No. 54155.)
 20. FARGO, WILLIAM G., AND TRAUTMAN, MILTON B. Late summer bird notes along the upper Michipicoten River, Ontario. *Canadian Field-Nat.*, **44**: 30-33, 1930.
 21. JENSEN, J. K. Notes on the nesting birds of Wahpeton, North Dakota. *Auk*, **35**: 347, 1918.
 22. WOOD, NORMAN A. A preliminary survey of the bird life of North Dakota. *Misc. Publ. Univ. Michigan Mus. Zool.*, no. 10, p. 62, pl. 6, fig. 1, 1923.
 23. OVER, W. H. Letter, 1936, on breeding in Miner County, South Dakota; specimens of eggs and female collected June, 1890, by F. Patton.
 24. PEABODY, P. B. Nesting habits of Leconte's Sparrow. *Auk*, **18**: 129-134, pl. 3, 1901.
 25. ROBERTS, THOMAS S. The birds of Minnesota. 8vo, Minneapolis, **2**: 391-393, 1932. (Summarizes all breeding records for Minnesota.)
 26. ABBOTT, GERARD A. Leconte's Sparrow at home near Chicago. *Wilson Bull.*, **23**: 53-54, 1911.
 27. FORD, EDWARD R., SANBORN, COLIN C., AND COURSEN, C. BLAIR. Birds of the Chicago area. *Program of Activities, Chicago Acad. Sci.*, **5**: 69-70, 1934.
 28. JONES, LYNDS, AND DAWSON, W. LEON. A summer reconnaissance in the West. *Wilson Bull.*, no. 33 (vol. 12), p. 31, 1900.
 29. KUMLIEN, LUDWIG, AND HOLLISTER, NED. The birds of Wisconsin. *Bull. Wisconsin Nat. Hist. Soc.*, new ser., **3**: 96, 1903.
 30. GROMME, O. J. Letter, 1935: no breeding records known to him in the State.
 31. AGERSBERG, G. S. The birds of southeastern Dakota. *Auk*, **2**: 280, 1885.
 32. OLSEN, RICHARD E. Records of rare Michigan birds, 1934. *Auk*, **52**: 100, 1935.
 33. MERRILL, J. C. Notes on the birds of Fort Sherman, Idaho. *Auk*, **15**: 16, 1898. (September 27, —? 1897.)
 34. SCLATER, WILLIAM L. A history of the birds of Colorado. 8vo, London, p. 361, 1912. (Specimen taken at Breckenridge, October 24, 1886, by Carter.)
 35. LINCOLN, FREDERICK C. In memoriam—Edwin Carter. *Condor*, **31**: 200, 1929. (Mentions above specimen as lost but record accurate.)
 36. BAIRD, S. F. Birds. In H. Stansbury's *Exped. to Valley of Great Salt Lake, Utah*, app. C, p. 330, 1852. (Fort Union.)
 37. DURY, CHARLES. A bird new to Ohio. *Ohio Naturalist*, **7**: 113, 1907. (A specimen taken in 1880 at Ross Lake, southwestern Ohio.)
 38. FUERTES, LOUIS A. Occurrence of Leconte's Sparrow (*Ammodramus leconteii*) at Ithaca, N. Y. *Auk*, **15**: 188-189, 1898.

39. AMES, J. H. Rare birds taken in Toronto and vicinity. *Auk*, **14**: 411, 1897.
(At Toronto, Ontario, May 5, 1897.)
40. RIDGWAY, ROBERT. Birds of North and Middle America. *Bull. U. S. Nat. Mus.*, no. 50, pt. 1, p. 224-226, 1900.
41. COOKE, W. W. The migration of North American sparrows. *Bird-Lore*, **12**: 14-15, 1910.

*1421 West Michigan Ave.,
Battle Creek, Michigan*