

THE BIRDS OF THE SAND DUNES OF NORTHWESTERN INDIANA.

C. W. G. EIFRIG, Oak Park, Illinois.

The region covered by this list is not the entire area of sand dunes in Lake and Porter counties, but is the "Dunes" in the narrower sense, i. e., the strip of dune country immediately adjoining the south end of Lake Michigan to a width of from one to two miles, extending from Gary to Michigan City, a distance of about twenty-five miles. This is an immensely interesting region to nature lovers and students of various branches of natural history or science. It is interesting to the physiographer, geologist and geographer, as here may be seen the destructive as well as the constructive forces of nature actually at work. It is a perfect Eldorado to the zoologist, especially those devoted to the study of ornithology and entomology, as well as the botanist. And in few other regions can studies in ecology be carried on as well as here. All of this needs no further elucidation in this connection. Most phases of it have been written upon, as, e. g., by Prof. W. S. Blatchley and Mr. A. W. Butler in the twenty-second annual report of the Indiana Department of Geology and Natural Resources for 1897; by Dr. H. C. Cowles, in his "Plant Societies of Chicago and Vicinity"; by R. D. Salisbury, in "The Geography of Chicago and Its Environs"; by V. E. Shelford, in his "Animal Communities"; and others. There is also a well-written account of the Dunes by Mr. A. F. Knotts of Gary in the Indiana geological report for 1916. Lately, artistically gotten-up books on the Dunes are beginning to appear, as "The Sand Dunes of Indiana," by E. S. Bailey; "The Dune Country," by E. H. Reed, and others.

Since the publication of Mr. Butler's "Birds of Indiana" in the 1897 report, which is one of the best if not *the* best state list of birds known to the writer, little has been published on the avifauna of the Dunes. Some short notes have been published on certain rare species here by Mr. H. L. Stoddard, of the Harris Public School Extension of Field Museum, who has spent much time in the Dunes in connection with his work. The notes are to be found in the "Auk," Vols. 33 and 34.

The writer's idea in compiling this list is not so much to quote old records, but to give the *present* status of the avifauna of this section. He has spent many days in the Dunes, in every month of the year, and has also accumulated material from the observations of members of the Chicago Ornithological Society, many of whom also go to the Dunes as often as they can. As an example of what may be seen here, at a time

when very little of interest can usually be seen in most places in this latitude, I quote the species I saw during my last three visits to the Dunes, on November 30th, December 21st and 27th, 1918, namely, Evening Grossbeaks, Pine Grossbeaks, Tufted Titmouse, Red-breasted Mergansers, Hooded Mergansers, Herring Gulls, Red-headed Woodpeckers, Chickadees, Blue Jays, Tree Sparrows, Juncos, Cardinals, White-breasted Nuthatches, Redpolls, Downy Woodpeckers, and Crows. Anyone familiar with bird conditions will see how difficult it would be to duplicate this list in most places. The writer deploras his lack of time to enter into the subject more fully, and hopes to be able to do so at some future time. In the meantime, everyone able to do so ought to lend his aid to the proposal to make a part of this alluring region a national park. Let it remain a monument of nature and a high school of and in nature forever!

ORDER PYGOPODES: Diving Birds.

1. *Colymbus auritus*, Horned Grebe. A none too common migrant, especially in spring, and one may now and then breed in Long Lake, near Millers, or some others of the larger and not too-accessible lakes that are between the dunes or along the southern end of them. They are seen on Lake Michigan in April, and several have been seen or taken on Long Lake, April 3rd, 15th and 21st, 1916, and April 25th and May 5th, 1917.

2. *Podilymbus podiceps*, Pied-billed Grebe. A common migrant and breeding species, nearly every pond or lake harboring one or several pairs. Late records are: April 1, 1916; June 2 and 6, 1916, nests with four to seven eggs found in Long Lake; July 18, 1911, family of old with young.

No doubt, if a competent observer would stay here throughout at least one whole year and patrol the beach daily, he would also see Holboell's Grebe and the Eared Grebe, but the writer knows of no late records.

3. *Gavia immer*, Loon. Formerly, no doubt, a common breeder here, but is so no longer. This shy bird does not stay where the genus homo becomes abundant, as is now the case in the Dunes, but it still carries here in migration. April 1, 1915, one swam about, a short distance from shore, at Tremont.

What has been said in the case of the Grebes undoubtedly holds good for the Loons, too. The Red-throated Loon would probably also be seen by continuous observation. And this is still more true of the species of the next order, the *Longipeumes*. Nearly all the far northern Jaegers, Gulls and Terns probably put in an appearance here, especially in long, severe winters and after strong northerly gales, but it takes more than ordinary fortitude to be out on the lake shore then.

ORDER LONGIPENNES: Long-winged Swimmers.

4. *Stercorarius longicaudus*, Long-tailed Jaeger. This is an instance of what painstaking search may reveal. Mr. H. L. Stoddard shot a fine male of this species at Dune Park, September 21, 1915. Mr. F. M. Woodruff, of the Chicago Academy of Science, mentioned several other occurrences of this boreal species to me.

5. *Larus hyperboreus*, Glaucous Gull. One was shot at Millers, August 8, 1897, which is in Mr. Woodruff's collection.

6. *Larus argentatus*, Herring Gull. An abundant winter resident, and a few, probably unmated individuals may be seen even in summer. April 24, 1915, there were many over the lake at Tremont; August 30, 1916, about ten at Millers. At the latter place, where there is a fishermen's colony on the beach, it is one of the common sights to see one perched on the top of every post in the lake and numerous others flying about.

7. *Larus delawarensis*, Ring-billed Gull. Almost as abundant as the preceding species, some days even predominating in numbers. A female was taken as early as August 3, 1915. Often flies up close to the walker along the beach, as if to inspect him.

8. *Larus philadelphia*, Bonaparte's Gull. Although this is next to the Herring and Ring-billed Gulls the commonest of the migrating gulls on Chicago River and off the lake shore at the parks, we do not see it nearly so often as the two other gulls at the south end of the lake. Probably we have just missed the days of their abundance. May 10, 1917, I saw about ten flying about in the harbor of Michigan City.

9. *Sterna caspia*, Caspian Tern. This now turns out to be a rather regular and not uncommon migrant here. In late August and early September as high as twenty have been seen at one time over the lake at Mineral Springs. Stoddard took specimens August 30, 1914, and September 4, 1915. I saw one at Millers August 30, 1916.

10. *Sterna forsteri*, Foster's Tern. An abundant migrant, at about the same time as the preceding species. August 30, 1916, a flock of about two hundred were fishing parallel to the water line near Millers, two or three rods from shore, where they were continually diving from about twenty feet above the water into the schools of minnows in the shallow water below, making as much noise as possible, reminding one of a lot of small boys on a rampage. Most still had the black crown of their nuptial dress.

11. *Sterna hirundo*, Common Tern. May almost be called a summer resident, as it is common after the first of August, and I have seen twenty as late as May 20 (1915), at Mineral Springs. Some days this species makes up the bulk of the tern flocks over the lake, on others the preceding leads in numbers.

12. *Sterna dougalli*, Roseate Tern. A specimen of this rare accidental visitor to inland waterbodies was secured by Mr. Stoddard on the beach between Millers and Dune Park, August 14, 1916. This seems to be the first clear record for this bird in Indiana, for the records cited by Mr. A. W. Butler in his "Birds of Indiana" either are for adjoining states only or do not state whether the specimen was taken or not.

13. *Hydrochelidon nigra surinamensis*, Black Tern. This species is extremely common in August and September at the southern end of Lake Michigan, where we have taken specimens as late as August 30 (1916), still in the entirely black breeding plumage. If they do not nest in the region under discussion, they certainly do in the immediate vicinity, as on Wolf and Hyde Lake, almost on the state line, also in larger sloughs a little south of the dune region.

ORDER STEGANOPODES: Totipalmate Swimmers.

14. *Phalacrocorax auritus auritus*, Double-crested Cormorant. Although we have no recent records for the occurrence of this species, there are numerous ones for the immediate neighborhood of the dune region in a wider sense than as used above, such as Liverpool, Lake County, three miles south of Millers, where one was taken October 16, 1896; it is frequently seen in Chicago, at the lake in the south end of the metropolis, and in the adjoining parts of Michigan. Mr. K. W. Kahmann, the Chicago taxidermist, frequently has specimens sent to him from Kouts, Porter County. Hence there can be no doubt as to the occurrence in the dune region in the restricted sense indicated above.

15. *Pelecanus erythrorhynchos*, White Pelican. Mr. F. M. Woodruff reports two at Millers, seen in the fall of 1896, and I have seen a specimen at Mr. K. W. Kahmann's shop, taken at Kouts, Porter County. There can be no doubt as to the casual occurrence of this species in the dune area.

ORDER ANSERS: Lamellirostral Swimmers.

16. *Mergus americanus*, Merganser. This is a common migrant and winter resident. They were common at Millers December 17, 1895, and on January 14, 1897; four were seen there.

17. *Mergus serrator*, Red-breasted Merganser. Of the same status as the preceding species. Saw two at Millers, November 30, 1918.

18. *Lophodytes cucullatus*, Hooded Merganser. Another common migrant and winter resident all over the southern end of Lake Michigan, with the added difference that it also breeds in the vicinity, along the Kankakee River. It no doubt formerly bred along the Grand and Little Calumet, and near the larger dune ponds, and may do so still.

19. *Anas platyrhynchos*, Mallard. A common sojourner during migration, and probably would breed if there were not so many hunters at Long Lake. I saw about ten fly over the dunes from this lake on March 18, 1916.

20. *Anas rubripes*, Black Duck. Of similar status as the preceding, only not so abundant. Stoddard took a male, May 5, 1917, at Millers, Lake County, out of eight he saw there.

21. *Chaulelasmus streperus*, Gadwall. A rare migrant, or probably accidental visitor. A specimen was taken October 18, 1896, at Liverpool, Lake County, practically in the dune region.

22. *Mareca americana*, Baldpate. A common migrant and not infrequently breeds in the neighborhood of the Dunes. May 12, 1917, I saw a pair and approached it quite closely, at Long Lake, which acted as though very much at home. They have been found breeding along the Kankakee and in the adjoining parts of Illinois and Michigan.

23. *Nettion carolinense*, Green-winged Teal. A migrant of somewhat uncertain status. Mr. Stoddard saw a pair at Dune Park, April 1, 1917.

24. *Querquedula discors*, Blue-winged Teal. A common migrant and rather common breeder over the whole region. May 30, 1916, I saw two in Long Lake, which indicates their breeding there. May 31, 1912, I saw three or four on Hyde Lake in Illinois, right over the Indiana line. When once the Dunes are made a state or national park, or when at least the present federal law regarding spring shooting is enforced strictly, also against the "original squatters" in this region, who now consider themselves above such laws, this species, as well as the Mallard, the Hooded Merganser, the Wood Duck, the Baldpate and others will no doubt breed here again as in former years.

25. *Spatula clypeata*, Shoveller. Of similar status as the preceding, perhaps not quite as common. I saw two pair in Long Lake, April 24, 1916, and May 31, 1912, three in Hyde Lake, near the Indiana line.

26. *Dafila acuta*, Pintail. A common migrant. E. W. Nelson in his "Birds of Northeastern Illinois" states that he, in 1875, found several pair nesting in the sloughs near the Calumet River, which may have been within this region.

27. *Aix sponsa*, Wood Duck. The quiet and often rather large ponds on the south margin of and between the Dunes are ideal breeding places for this beautiful duck, and it is no doubt only owing to the relentless persecution of past years that it now is seldom or never seen in summer. Let us hope for better times for them in the near future. It is almost criminal in my eyes to shoot and pluck such beauty.

28. *Marila americana*, Redhead.

29. *Marila valisneria*, Canvas-back. These two species were formerly abundant on Wolf and George Lakes, at the edge of the dune country, also at Liverpool, Lake County, where a large flock of the latter were seen February 28, 1896, by Mr. J. G. Parker, but now they are far less common.

30. *Marila marila*, Scaup Duck. March 18 and April 24, 1916, I saw flocks of fifteen and seven on Long Lake which I took to be this species. There is absolutely no reason why they should not be here, as well as *Marila affinis*, since they breed from Minnesota northward and winter from there south and southeastward, thus being almost compelled to cross over.

31. *Marila affinis*, Lesser Scaup Duck. An abundant migrant over the whole region of which the Dune region is the centre.

32. *Marila collaris*, Ring-necked Duck. Also this species can hardly avoid being found here during migration, although I have no positive dates at my command. It is simply a matter of having enough time to be there continually during migration to find this and other species of similar habits and range.

33. *Clangula clangula americana*, Golden-eye. A common winter resident throughout the southern end of Lake Michigan. This is a hardy species and is in some places called Winter Duck. March 18, 1916, I saw about twenty-five on Long Lake.

34. *Charitonetta albeola*, Buffle-head. Not as common as the preceding one, since it spends the winter farther south as a rule. Mr. Stoddard took a female out of a small flock on Long Lake, April 25, 1917.

35. *Harelda hyemalis*, Old-squaw. An abundant winter resident. Mr. J. G. Parker, Jr., and Mr. F. W. Woodruff saw large flocks of them at Millers in January and February, 1897.

The Eiders and Scoters would probably in time nearly all be seen by one who would have the time and hardihood to patrol the beach daily during the winter, as there are records for them from as near the south end of the lake as Chicago.

36. *Erismatura jamaicensis*, Ruddy Duck. Early records show that this species not only visited here but bred in this region. Mr. H. K. Coale found two males and a female together at Tolleston, now a part of Gary, May 9, 1877. It no doubt still returns to the ponds and sluggish streams so well loved by it, as the Grand and Little Calumet.

What has above been said concerning the Eiders and Scoters probably holds good for the various Geese, of which we have no definite record for the narrow region under discussion. They would probably nearly all be seen in time. Mr. Stoddard saw six Snow Geese off Gary October 21, 1916, which I would put down as *Chen hyperboreus hyperboreus*, since that is the form whose breeding range is west of Hudson

Bay, and would probably come south on the west side of Lake Michigan, while those coming southwest in fall along the coast from Michigan should be the eastern form, *Chen hyperboreus nivalis*.

37. *Chen caerulescens*, Blue Goose. Mr. Stoddard saw a flock of about forty off Gary, October 21, 1916, one of which, a fine male, he collected. He concludes that this species is probably common for a few days in fall along the southern end of the lake.

38. *Branta canadensis canadensis*, Canada Goose. This species not so long ago bred in the Calumet marshes, adjacent to our area, and is now a common migrant and winter resident. March 18, 1916, a flock of about forty were holding a sort of convention, apparently, at the edge of the ice, off Millers, where they were very noisy, as though debating hard. April 1, a flock of twelve flew northward, later a flock of thirty came in wedge formation, then formed a broad line front, and then suddenly, as if by command, broke and plunged down on the lake.

39. *Olor columbianus*, Whistling Swan. Mr. Woodruff reports seeing several specimens that had been taken at Liverpool, Lake County, and he himself shot one near Hyde Lake in Indiana. It no doubt still flies over our region in its migration.

ORDER HERODIONES: Storks, Herons, Ibises.

40. *Botaurus lentiginosus*, Bittern. A common summer resident. April 24, 1916, I heard two "pumping" at Mineral Springs.

41. *Ixobrychus exilis*, Least Bittern. A common summer resident in the fringe of cat-tail around most ponds, especially at Long Lake, where I scared up one September 25, 1915. Stoddard found a nest under construction there June 2, 1916.

42. *Ardea herodias*, Great Blue Heron. A migrant of diminishing numbers, and a few pairs may still breed along the Calumet, as they formerly did in considerable numbers. I saw one August 13, 1915, at Millers.

43. *Butorides virescens virescens*, Green Heron. A rather common summer resident. They like to place their nests in button bush (*Cephalanthus occidentalis*) and other growth forming dense masses, and this is found along the edge of sloughs in abundance. April 24, 1916, we saw one at Dune Park, also June 24.

44. *Nycticorax nycticorax newius*, Black-crowned Night Heron. While we have not seen or taken this species lately in the Dunes, it is rather common in the whole neighborhood, e. g., Hyde Lake, Kouts, etc., so it cannot fail to at least visit the region occasionally.

45. *Grus mexicana*, Sandhill Crane. Mr. Stoddard saw three near Dune Park, April 7, 1917. He is familiar with the species from a residence of years in Florida. They have lately been reported from a num-

ber of neighboring locations also, such as Crete, Illinois, near the Indiana line.

46. *Rallus elegans*, King Rail. A common summer resident in the large and small cat-tail areas of the region. Dates range from April 13 to October 21.

47. *Rallus virginianus*, Virginia Rail. Also a summer resident, perhaps not quite as common as the preceding species. May 30, 1916, I saw three at Mineral Springs.

48. *Porzana carolina*, Sora. Abundant migrant, but probably less common breeder than the two preceding species. April 24 and May 20, 1916, I saw one and two respectively at Mineral Springs.

There can be no doubt that the Yellow and Black Rails are also found here, but owing to their small size, secretive habits, the difficulty of flushing them, and aversion on the part of the dune hiker to thoroughly explore the areas of cat-tail, they have so far escaped detection, but have been seen at Hyde and Wolf Lakes, immediately adjoining.

49. *Gallinula galeata*, Florida Gallinule. Nests rather commonly on Long Lake. April 22, 1917, the first ones of the year were seen there, and June 6, 1916, a nest of seven partly incubated eggs was found.

50. *Fulica americana*, Coot. An abundant migrant and sparing nester. They would no doubt nest commonly if left undisturbed. A few nest on Long Lake. January 6, 1917, we found a dead one that appeared to have died recently.

ORDER LIMICOLAE: Shore Birds.

If one could for a whole year, or at least throughout the spring and fall migration, patrol the beach of the dune country systematically, many more species of *Limicolae* would undoubtedly be seen than are here recorded, for it is the logical place for them to be met with. Whether they come in fall along the east or west shore of Lake Michigan, they must come here, the south end of the lake.

51. *Philohela minor*, Woodcock. A summer resident which is not very common. The many campers and dune prowlers probably make this region increasingly distasteful to it. July 18, 1911, I flushed two from a willow thicket at the border of a small pool at Millers, and I have seen them at Mineral Springs.

52. *Gallinago delicata*, Wilson's Snipe. A common migrant.

53. *Macrorhamphus griseus griseus*, Dowitcher. A rare migrant. Mr. F. W. Woodruff saw one or more of them at Liverpool, September 2, 1892.

The Stilt Sandpiper, *Micropalama himantopus*, has also been taken near our region, and no doubt is also one of the rare sojourners among the shore birds.

54. *Tringa canutus*, Knot. A migrant, probably not as rare as usually thought. Mr. Stoddard took two specimens, both in spring plumage, June 2, 1917, and September 2, 1916, at Millers, and I took one at the same place from among a flock of Sanderlings, September 25, 1916.

55. *Pisobia maculata*, Pectoral Sandpiper. An abundant migrant.

56. *Pisobia bairdi*, Baird's Sandpiper. A rare migrant. A few may be seen during August and September on the beach near Millers, which, by the way, seems to be the best place for Sandpipers, especially the rare ones. Mr. Stoddard secured two fine specimens at Dune Park, August 23, 1916, and two at Millers, September 2, 1916.

57. *Pisobia minutilla*, Least Sandpiper. A common migrant. The small troops of scurrying sandpipers on the beach are largely made up of this species. August 13, 1915, I saw about ten at Millers.

58. *Pelidna alpina sakhalina*, Red-backed Sandpiper. A common spring migrant over the whole neighborhood, so it must at times be found here also. Mr. G. F. Clingman took a specimen here, on the beach, June 1, 1879.

59. *Ereunetes pusillus*, Semipalmated Sandpiper. A common migrant along the beach, where it may be seen in the company of the Least Sandpiper, Sanderling and others. August 14th, 23rd and 30th, 1916, they were plentiful on the beach at Millers.

60. *Calidris leucophaea*, Sanderling. An abundant migrant. The earliest record for the fall migration is July 18 (1911), when I took two from a flock of fifteen at Millers. From then on they are common up to about October 1. One taken by Stoddard, August 23, 1916, at Millers, was still in breeding plumage, but after that date all were in the fall dress. June 2, 1917, Stoddard saw several in full nuptial plumage near Dune Park.

61. *Limosa haemastica*, Hudsonian Godwit. Probably a rare migrant. Mr. Charles Brandle took one on Wolf Lake, Indiana, September 15, 1898, which is close to our region.

62. *Totanus melanoleucus*, Greater Yellow-legs. Migrant. Mr. J. G. Parker has seen them as early as March 30 (1895) at Liverpool.

63. *Totanus flavipes*, Yellow-legs. Of similar status as the last.

64. *Helodromas solitarius solitarius*, Solitary Sandpiper. A not uncommon migrant. May 20, 1916, I saw one at Mineral Springs.

65. *Catoptrophorus semipalmatus inornatus*, Western Willet. Mr. F. W. Woodruff refers the Willets seen along the beach near Millers to the western form. He has taken many there. It is seen occasionally from August 1 to the 15th of September, also late in April or early in May. (Woodruff.)

The chances are that both the eastern and western forms occur here.

66. *Bartramia longicauda*, Upland Plover. Apparently a rare breeder in our restricted region, but common along the southern edge of it. Mr. A. W. Butler gives several breeding records for Lake County and the Calumet marshes in Indiana.

67. *Tryngites subruficollis*, Buff-breasted Sandpiper. Apparently a rare migrant. Mr. Stoddard took a fine specimen at Millers on August 30, 1916. Up to the publishing of Mr. Butler's "Birds of Indiana," there was only one record of its having been taken in the state. This, then, would be the second.

68. *Actitis macularius*, Spotted Sandpiper. A common summer resident. April 24, 1916, I saw two at Mineral Springs, and, on May 20, six. The Curlews seem to be a thing of the past.

69. *Squatarola squatarola*, Black-billed Plover. Rather rare along the beach. Stoddard saw three on August 30, 1916, at Dune Park; September 2, 1916, he collected four fine specimens between Millers and Gary, ranging from full breeding dress, through the eclipse plumage of a few black feathers only on belly, to entire fall dress. The last one noted by him was October 15, 1916, near Gary.

70. *Charadrius dominicus dominicus*, Golden Plover. Probably now rarer here than the preceding species. Both are migrants, of course. I saw two, April 24, 1915, at Tremont.

71. *Oxyechus vociferus*, Killdeer. A common migrant and breeder.

72. *Aegialitis semipalmata*, Semipalmated Plover. A migrant, associating with Semipalmated and Least Sandpipers on the beach.

73. *Aegialitis meloda*, Piping Plover. Formerly a common, now a rather rare breeder. Despite the overrunning of its peculiar breeding grounds on the part of campers, bathers, dune prowlers, ecology classes and others, this dapper, attractive little beach sprite has survived here as breeder to probably a half dozen pairs between Millers and Mineral Springs. Its peculiar habitat is the depression between the first two low, incipient dunes, a few rods back from the lake. Sets of eggs are found nearly every year. Stoddard has taken specimens August 23, 1916, in full summer dress; August 23, 1916, in the eclipse plumage, and September 2, 1916, in full winter dress.

74. *Arenaria interpres interpres*, Turnstone. A migrant. Mr. Stoddard took one June 2, 1917, at Millers in full breeding plumage. They are here again by August 5 (1916), when he took another specimen yet in full spring dress. One taken August 23, 1916, was partly changed, and the last of September 2, 1916, was entirely in winter plumage.

ORDER GALLINAE: Gallinaceous Birds.

75. *Colinus virginianus virginianus*, Bob-white. This attractive species is not as common here as one would wish. Their musical call is

heard but rarely. March 11, 1916, we saw a covey of about twelve at Mineral Springs; August 24 we heard one; August 13, 1915, I saw two on the dune immediately behind the electric railway station at Millers.

76. *Bonasa umbellus umbellus*, Ruffed Grouse. This fine species still holds its own in the dense covers of scrubby oak, juniper, sumac, etc., between the middle dunes and in the woods on the southern fringe of them. No more than three or four at the highest are seen in a day's walk. March 11, 1916, I flushed three at Mineral Springs; on the 18th, one at Millers; July 16, 1915, also one at the last-named place; one January 6, 1917, and one February 17, 1917.

77. *Tympanuchus americanus americanus*, Prairie Chicken. Very rare here. Mr. Stoddard saw two near Mineral Springs in the fall of 1913. They had probably sought refuge there from the persecution of hunters a little farther south.

ORDER COLUMBAE: Pigeons and Doves.

77. *Zenaidura macroura carolinensis*, Mourning Dove. A rather common summer resident, but present in spring and fall as well. April 1, 1916, two were seen at Millers; on the 24th, four at Mineral Springs; May 20th, six at Millers, one nest on ground, with two eggs.

The last records of the memorable Passenger Pigeon, which is a thing of the past for this region, are probably those given by Mr. Woodruff in his "Birds of the Chicago Area," where he quotes from the "Auk," Vol. 12, page 389, as follows: "April 8, 1894, Mr. Edward J. Geckler saw a flock of about fifteen Wild Pigeons flying while in a woods near Liverpool, Indiana.

"Mr. Kaempfer, a taxidermist of this city, had a fine male Passenger Pigeon mounted on one of his shelves which was brought in on March 14, 1894. The gentleman who brought it said he shot it near Liverpool, Indiana, and saw quite a number of them at that time."

ORDER RAPTORES: Birds of Prey.

79. *Cathartes aura septentrionalis*, Turkey Vulture. A rare accidental visitor, though one would expect it to be more common. Stoddard saw three at Tremont, July 4, 1917. For hawks this is a great region, as is to be expected, considering the great number of small rodents and large and small swamp birds found here.

80. *Circus hudsonius*, Marsh Hawk. This is the commonest hawk, where it finds the many large and small swales to its liking for feeding and nesting. They come early and stay late. March 11, 1916, five or six were seen at Mineral Springs; on the 18th, two; April 1, 1916, four, or rather two pair, were observed mating at Millers. May 20, 1916, we saw seven at Mineral Springs and found a nest in a large swale with

five half-incubated eggs. May 30th another nest with four eggs was found there. Stoddard located six nests within a radius of one mile of Mineral Springs.

81. *Accipiter velox*, Sharp-shinned Hawk. A much rarer breeder. March 11, 1916, we saw one at Mineral Springs; April 1st, two; August 13, 1915, I saw one at Millers; May 12, 1917, one in immature plumage at Mineral Springs.

82. *Accipiter cooperi*, Cooper's Hawk. This species is a little commoner than the preceding. It has picked on the stand of large timber in the Mineral Springs-Tremont sector as being to its liking. April 1, 1916, we saw four at the former place; May 2, one; May 25, 1914, Stoddard found a nest with four partly incubated eggs 45 feet up in a tan-rack. July 13, 1915, he took four young, nearly ready to fly, from a nest at the latter place. The next year he located a nest in the same place, also with four eggs, on May 21st. We saw two there February 17, 1917.

83. *Astur atricapillus atricapillus*, Goshawk. Probably a rare winter visitant. I saw one February 17, 1917, at Mineral Springs, carrying a cottontail in his talons.

84. *Buteo borealis borealis*, Red-tailed Hawk. A rather uncommon summer resident, commoner in migration. April 24, 1916, we saw two at Mineral Springs; May 12, 1917, one.

85. *Buteo lineatus lineatus*, Red-shouldered Hawk. This is after the Marsh Hawk the commonest hawk. One or more can be seen at every visit to the Dunes. Dates are: April 24, 1915, one seen at Tremont; May 29, 1916, one at Mineral Springs; March 11, 1916, four at Mineral Springs; April 1, one at Millers; August 20, 1916, one at Mineral Springs; September 25, 1915, one at Millers. Mr. Stoddard found a nest at Mineral Springs.

86. *Buteo platypterus*, Broad-winged Hawk. Seems to be rare here, probably common enough on some days during migration. Mr. Butler quotes Mr. C. E. Aiken, who says that it breeds in Lake County. I saw two at Whiting, Lake County, April 18, 1914.

87. *Archibuteo lagopus sancti-johannis*, Rough-legged Hawk. Mr. Butler quotes Mr. J. G. Parker as saying that this is the commonest of the large hawks in Lake County in winter. I saw one November 30, 1918, near Millers.

88. *Haliaeetus leucocephalus leucocephalus*, Bald Eagle. Up to within twenty years or less ago this great bird was almost a common sight in the Dunes, nesting regularly. When the number of foolish gunners increased, it had to go; but it still comes back from time to time as if to survey its former realms again. Mr. Stoddard saw a bird in the immature plumage at close range at Millers, October 15, 1916, and Mr. W. D.

Richardson, who spends more time in the Dunes than anybody I know of, saw three at Mineral Springs, June 17, 1917.

89. *Falco columbarius columbarius*, Pigeon Hawk. Probably not as rare as supposed. We saw one at Mineral Springs, March 11, 1916.

90. *Falco sparverius sparverius*, Sparrow Hawk. Rather rare here. I saw one at Millers, September 29, 1915.

The Osprey can hardly fail to at least pass over our region at times, but I have no recent dates. Mr. Stoddard and I saw one near Kouts, Porter County, just a few miles south of the Dunes, May 6, 1916.

91. *Asio wilsonianus*, Long-eared Owl. Apparently a rare migrant and breeder, but is perhaps only more secretive than rare. Stoddard has seen several at Mineral Springs, and found a nest of them with three partly feathered young, May 25, 1914.

92. *Asio flammeus*, Short-eared Owl. Should be common here, as the swales that attract the Marsh Hawk are equally attractive to it, but it is not. It must nest, as adults were frequently seen during May and June, 1914, at Mineral Springs.

93. *Cryptoglaux acadica acadica*, Saw-whet Owl. Probably a rare permanent resident, as witness these dates: Mr. Stoddard took one February 15, 1914, at Millers, and one April 4, 1915, at Mineral Springs.

94. *Otus asio asio*, Screech Owl. Like the Sparrow Hawk, this is not as common as one would expect. It is, of course, a permanent resident. We saw one near Millers on March 18th and on August 30th, 1916.

95. *Bubo virginianus virginianus*, Great Horned Owl. Contrary to expectations, this species is commoner here than the Screech Owl or Short-eared Owl seem to be. In a walk between the dunes from Millers to Mineral Springs, three or four may be scared up, and there is a pair staying in the dark tamarack and pine swamp at the latter place, and another one nearby. We saw three, e. g., March 11th and 18th, 1916; August 30, we saw one near Millers being pestered by crows. Stoddard has found three nests in one season alone, to which were added three or four more near to Dune Park or Mineral Springs the following seasons. Here are nesting data: March 15, 1914, a nest was found with three slightly incubated eggs in a scrub pine, forty feet up; March 17th, two eggs were found in the cavity at the top of a large dead pine stub. The third, containing three downy young, in a similar location, was found April 4th. February 25, 1917, a nest with two eggs was found near Dune Park, thirty feet up in a pine, in an old crow's nest. March 4th there were three eggs, which are now in my collection. February 24, 1918, one was found in the same neighborhood, probably built by the same pair, containing two eggs, in a Banksian Pine, of which fine photographs were secured by Mr. W. D. Richardson, who succeeded in taking

pictures of the female on the nest, as well as of the young later on. The nest was discovered by Dr. Alfred Lewy. On one of the nests the remains of a Ruffed Grouse were found, on another those of a Bittern.

ORDER COCCYGES: Cuckoos and Kingfishers.

96. *Coccyzus americanus americanus*, Yellow-billed Cuckoo. A summer resident which is not exactly common. I have seen one at Millers on each of the following dates: May 20, July 18, and August 30, 1916.

97. *Coccyzus erythrophthalmus*, Black-billed Cuckoo. Much rarer as migrant and breeder than the preceding species.

98. *Ceryle alcyon*, Belted Kingfisher. A moderately common breeder in the region. April 1, 1916, we saw three on the way from Gary to Millers along the Grand Calumet. Here and along the creek at Tremont they are seen all summer and fall.

ORDER PICI: Woodpeckers.

99. *Dryobates villosus villosus*, Hairy Woodpecker. Rare here, as indeed it seems to be over most of its range. I saw one April 24th and May 20th, 1916, at Mineral Springs, the latter date showing that it breeds.

100. *Dryobates pubescens medianus*, Downy Woodpecker. A common migrant, not as numerous as breeder. March 11 and 18, 1916, several were seen attacking old cattail stalks at Mineral Springs.

101. *Picoides arcticus*, Arctic Three-toed Woodpecker. A rare winter visitant. Mr. Stoddard secured a male of this species March 11, 1917. Mr. Butler does not give this species at all, so this seems to be the first record for Indiana.

102. *Sphyrapicus varius*, Yellow-bellied Sapsucker. A very common migrant. Some dates are: March 30, April 1 and 24, 1916, Tremont.

103. *Melanerpes erythrocephalus*, Red-headed Woodpecker. A not very common summer resident; when there is a good acorn crop, a few sometimes winter in the Dunes. April 24, 1915, several were seen at Tremont; May 20, 1916, I saw six at Mineral Springs; November 30, 1918, about fifteen near Millers.

104. *Colaptes auratus luteus*, Northern Flicker. A common migrant and breeder. Now and then an odd one stays over winter. Thus we saw one at Mineral Springs, February 14, 1917.

ORDER MACROCHIRES: Goatsuckers, Swifts, etc.

105. *Antrostomus vociferus vociferus*, Whip-poor-will. Must be called a rare migrant here and should breed, although I have no dates for it, unless one seen May 20, 1915, at Mineral Springs, indicates breeding. The Whip-poor-will seems to me to be decidedly decreasing in numbers.

106. *Chordeils virginianus virginianus*, Nighthawk. There must be days or evenings when this species passes over in numbers, but we have never been here then, nor have we dates that indicate nesting, but a few pair probably do. May 20, 1916, I found a dead one along the railway track between Gary and Millers, which seemed to have flown against a wire, an unusual thing for such an accomplished flier.

107. *Chaetura pelagica*, Chimney Swift. Cannot be called common here in the usual meaning of that word as applied to Chimney Swifts. A pair or two are seen around the farm buildings of the region and a few more in the village of Millers. They arrive during the last week in April and are gone by the end of August, with a few stragglers flying over in September.

These last two species seem to me to be extending their fall migration farther into autumn every year.

108. *Archilochus colubris*, Ruby-throated Hummingbird. This is the only member of the order that can be called common, even if only locally so. What comes near to being a nesting colony of them was discovered by Mr. Stoddard and Mr. Richardson along the creek at Tremont, where they found nine nests within a rather small radius. We also found an old nest in Mineral Springs, 25 feet up in a black birch, 10 feet out on a limb.

ORDER PASSERES: Perching Birds.

109. *Tyrannus tyrannus*, Kingbird. A moderately common breeder, but abundant on certain days in migration. Thus on August 13, 1915, on a walk from Gary to Millers, it seemed to be the most prominent bird. On the other hand, May 20, 1916, we saw only two at Mineral Springs.

110. *Myiarchus crinitus*, Crested Flycatcher. For this species the Dunes and adjacent swampy woods are a metropolis. Stoddard found several pairs nesting where the B. & O. Railroad passes through such woods near Millers, June 21, 1914. May 20, 1916, we saw about twelve at Mineral Springs, and August 3, 1915, about four at Millers; May 30, 1916, five at Mineral Springs.

111. *Sayornis phoebe*, Phoebe. A few pair only breed in the Dunes. March 30, 1916, Stoddard must have struck a migrating flight of them, for he saw twelve near Millers; April 1, along the Calumet from Gary to Millers, we saw only two, one singing or twittering ecstatically in flight, which I never saw a Phoebe do before.

112. *Nuttallornis borealis*, Olive-sided Flycatcher. Rather common in migration from the middle of August to the first week in September, between and on the dunes just back from the lake. August 23, 1916, Stoddard took four at Mineral Springs, and saw a number of them August 30 near Millers.

113. *Myiochanes virens*, Wood Pewee. The melancholy note of this small flycatcher is not nearly as often heard as one would suppose from the wooded condition of the Dunes. On the other hand it cannot be called rare.

114. *Empidonax flaviventris*, Yellow-bellied Flycatcher. A probably not uncommon migrant. We saw one or two at Mineral Springs, May 20 and 30, 1916.

115. *Empidonax virens*, Acadian Flycatcher. Uncommon over most of the Dunes, but nests rather commonly in the damp woods along the creek at Tremont. Stoddard found nests on the following dates: July 30, 1915, one with two partly feathered young; June 28, 1916, one with one young and one addled egg, and one on the same day with two freshly laid eggs, at Mineral Springs.

116. *Empidonax trailli trailli*, Traill's Flycatcher. A few nest in bushes in the open swamps.

117. *Empidonax minimus*, Least Flycatcher. A common enough migrant, but scarce breeder. May 20, 1916, there were about six in a migratory wave.

The Shore Lark or Horned Lark (*Otocoris alpestris alpestris*) probably occurs here in company with the Snow Buntings and Longspurs, which frequent the beach at times in fall and winter, but I have no records.

118. *Otocoris alpestris praticola*, Prairie Horned Lark. A rare breeder in our circumscribed area, common enough just a little south of the Dunes.

119. *Cyanocitta cristata cristata*, Blue Jay. A common permanent resident; especially common in the tamarack swamp at Mineral Springs, which is protected from the cold north wind by several dunes.

120. *Corvus brachyrhynchos brachyrhynchos*, Crow. A rather common breeder and quite a few stay over winter. The flocks of migrating crows show what seems to be a crossing of migration routes here. Flocks coming from southwest in spring cross over to the eastern shore of Lake Michigan, while others coming from southeast seem to make for the western shore of the lake, heading toward Wisconsin, thus crossing their paths. In fall it is, of course, reversed. We believe to have noticed the same thing with other migrants, too, e. g., Bluebirds.

121. *Dolichonyx oryzivorus*, Bobolink. A common summer resident, breeding in the swales and moist meadows adjoining the dunes on the south.

122. *Molothrus ater ater*, Cowbird. This is a decided nuisance in our region. April 24, 1915, I saw several hundred on a walk of two miles from Tremont to Mineral Springs, and most were apparently looking for nests. To this I ascribe the fact that there are relatively so few small birds found here in summer, such as warblers, finches, etc.

Cowbird eggs or young are found in many if not most of the nests of small species found here. They should be thinned out.

123. *Agelaius phoeniceus phoeniceus*, Red-winged Blackbird. A common summer resident. They arrive the first and second week in March and some stay late into November.

124. *Sturnella magna magna*, Meadowlark. A common summer resident in the same places as the Bobolink. We saw one at Mineral Springs March 11, 1916. Mr. H. K. Coale asserts that the form breeding in Indiana and Illinois is *Sturnella magna argutula*, Southern Meadowlark, which is probably correct.

125. *Icterus galbula*, Baltimore Oriole. A moderately common summer resident.

126. *Euphagus carolinus*, Rusty Blackbird. A migrant of somewhat uncertain behavior in regard to time and appearance.

127. *Quiscalus quisculus aeneus*, Bronzed Grackle. An abundant migrant, but not very common as breeder. Arrives at the same time as the Redwing and is found late into fall.

128. *Hesperiphona vespertina vespertina*, Evening Grosbeak. This rare, erratic northern visitant now turns out to be a very common winter resident in the Dunes. They were first discovered by Mr. Stoddard, February 6, 1916, along the Calumet between Gary and Millers, making their quarters in a densely grown ravine on the north side of the river. At first a flock of about forty-five was seen, then we saw small flocks at Mineral Springs on March 11 and 18; March 30, flocks of seventy-five and fifty were seen. Then more and more disappeared, until May 4 the last one was seen. They reappeared in the same places, but not so many, in November of the same year, 1916, and were seen now and then also in Chicago till the last week in May, when Mr. H. K. Coale saw one in Highland Park. We saw small flocks of six to eight March 24, 1917, at Mineral Springs, and Stoddard took one there May 15.

The reason for this preference for the Dunes became apparent when I examined the stomach contents of several taken; this consisted mostly of the berries of *Rhus trilobata*, *Rhus aromatica*, and even *Toxicodendron vernix*. The first two are extremely abundant near Millers, the last at Mineral Springs. November 30, 1918, I saw about eighteen at Millers, and again December 21st and 28th.

129. *Pinicola enucleator leucura*, Pine Grosbeak. A rare, irregular winter visitant. I took one out of two seen November 30, 1918.

130. *Carpodacus purpureus purpureus*, Purple Finch. Another most erratic visitant, only with this difference that it may also be seen in summer. We have not found it often in the Dunes. April 1, 1916, we saw two near Gary, and January 6, 1917, there was a solitary one in the big timber at Mineral Springs.

131. *Loxia curvirostra minor*, Crossbill.

132. *Loxia leucoptera*, White-winged Crossbill. These two erratic northern visitants were reported as numerous for Lake County during the summer of 1869 and during the following winter, as quoted by Mr. Butler. They still turn up every winter, mostly the former, at Beach, near Waukegan, north of Chicago, and it is unthinkable that they would not also visit the extensive stands of conifers at the south end of the lake.

133. *Acanthis hornemanni exilipes*, Hoary Redpoll. On December 23, 1916, Mr. Stoddard noticed among the numerous redpolls, then in the tamarack swamp at Mineral Springs, a small flock of larger and whiter ones than *linaria*. He secured one, which proved to be this form; the rest took flight and never showed themselves again.

134. *Acanthis linaria linaria*, Redpoll. March 11, 1916, there were hundreds in the swamp at Mineral Springs. By November 25th of the same year they were back again and were seen December 23, January 6, 1917, on which days about five hundred were here. By March 24th they had dwindled down to about fifteen, at least that is all we saw. They fed on the seeds of black birch and alder. They were abundant in many places around Chicago that winter.

There is every likelihood that the other forms of *Acanthis linaria* turn up here at times, as they have done at Chicago, but there is no one here to register it.

135. *Astragalinus tristis tristis*, Goldfinch. A common summer resident, and some flocks stay over winter. April 24, 1915, they were common at Tremont; May 30th, about fifty at Mineral Springs; also July 18th; August 13th, families of old and young could be seen; August 30, 1916, on the other hand, I saw only one at Millers.

136. *Passer domesticus*, English Sparrow. This pest is here, too.

137. *Spinus pinus*, Pine Siskin. An irregularly abundant migrant. October 12, 1919, a flock of about 500 were at Mineral Springs.

138. *Plectrophenax nivalis*, Snow Bunting. An irregular migrant and winter visitant. Sometimes arrives about the middle of October, in other years later. Stoddard took three October 28, 1916, near Tremont; October 24, 1915, January 6 and February 17, 1917, a little flock was on the beach near Mineral Springs. They are always on the beach, not among the Dunes.

139. *Calcarius lapponicus lapponicus*, Lapland Longspur. Not common. March 18, 1916, we saw a flock of about twenty at Dune Park, where the dunes have been removed and a large, level, weed-grown area is now found instead.

140. *Poocetes gramineus gramineus*, Vesper Sparrow. A few breed here; they are found from March 30th (1916) to October 28th (1916).

141. *Passerculus sandwichensis savanna*, Savannah Sparrow. Also is not common here. April 24, 1916, there were quite a number on the large swale at Mineral Springs.

142. *Passerherbulus henslowi henslowi*, Henslow's Sparrow. What might almost be called a breeding colony is found in the same large swale mentioned under the preceding species. They were first noticed April 24, 1915, and 1916. In May their harsh "tsray" call is very noticeable.

143. *Passerherbulus lecontei*, Leconte's Sparrow. A rare migrant. Stoddard collected one at Mineral Springs, October 19, 1916.

144. *Passerherbulus nelsoni nelsoni*, Nelson's Sparrow. Mr. Butler quotes H. K. Coale and others, who say they have found this elusive species repeatedly in Lake County, next to the Dunes.

145. *Zonotrichia leucophrys leucophrys*, White-crowned Sparrow. A not too common migrant.

146. *Zonotrichia albicollis*, White-throated Sparrow. An abundant migrant.

147. *Spizella monticola monticola*, Tree Sparrow. An abundant migrant and winter resident.

148. *Spizella passerina passerina*, Chipping Sparrow. A rather uncommon summer resident. This sparrow is strangely rare in northeastern Illinois and northwestern Indiana, although common or abundant in most places of its range. Stoddard found one of the few nests of a season at Tremont on July 15, 1917, containing one young and one Cowbird. During migration they are common enough on some days; thus, April 14, 1915, there were many at Tremont; May 29, 1916, I saw about fifteen at Mineral Springs, but on the 30th only three.

149. *Spizella pusilla pusilla*, Field Sparrow. A more common breeder than the foregoing species. They arrive about the beginning of April. On the first of that month, 1916, we saw one near Millers.

150. *Junco hyemalis hyemalis*, Slate-colored Junco. An abundant migrant and winter resident. September 25, 1915, we saw about twenty near Millers, and April 24, 1916, there were still many at Tremont.

151. *Melospiza melodia melodia*, Song Sparrow. A very common summer resident, because the many bush-fringed pools and small water-courses are just to its liking. They come early in March, and Mr. Stoddard saw one as late as December 23 (1916).

152. *Melospiza lincolni lincolni*, Lincoln's Sparrow. A rare migrant; perhaps only rarely seen because so secretive. Stoddard took one May 20, 1916, at Mineral Springs.

153. *Melospiza georgiana*, Swamp Sparrow. An abundant migrant and less common summer resident. April 1, 1916, we saw one; May 20 about ten at Mineral Springs.

154. *Passerella iliaca iliaca*, Fox Sparrow. A common migrant; not seen, however, in such numbers as *Z. albicollis*. April 1, 1916, we saw six on the way from Gary to Millers.

155. *Pipilo erythrophthalmus erythrophthalmus*, Towhee. This is one of the commonest summer residents in this region, from April 1 (1916) to late in October.

156. *Cardinalis cardinalis cardinalis*, Cardinal. A permanent resident, but seen only in a few chosen places. At Mineral Springs and Tremont, and especially along the roads leading from there to the beach, from one up to a dozen may be seen any day, summer or winter. November 30, 1918, I saw about fifteen near Millers.

157. *Zamelodia ludoviciana*, Rose-breasted Grosbeak. A rare summer resident.

158. *Passerina cyanea*, Indigo Bunting. A summer resident which is somewhat more numerous than the preceding, but cannot be called common.

159. *Piranga erythromelas*, Scarlet Tanager. A rather rare summer resident, something like the Rosebreast in numbers. A little more numerous in migration.

160. *Progne subis subis*, Purple Martin. A summer resident which cannot be called plentiful. May 30, 1916, I saw only about six on the way from Millers to Mineral Springs, a distance of about twelve miles.

161. *Hirundo erythrogastra*, Barn Swallow. A little more numerous than the preceding. Both form small colonies about the farm buildings on the southern edge of the Dunes. Thus on the walk above referred to from Millers to Mineral Springs, I saw about fifteen of this species.

162. *Iridoprocne bicolor*, Tree Swallow. During migration many can be seen gracefully skimming over Long Lake, but only a few stay to nest. On June 19, 1915, I saw a pair at a nesting hole in a dead cottonwood on top of a dune at Millers, and Mr. Stoddard found a nest with four fresh eggs in a hole in a telegraph pole near Long Lake, June 8, 1914.

The Cliff Swallow will, no doubt, occasionally be found here, too.

163. *Riparia riparia*, Bank Swallow. This is the only swallow that can be called common, and this only locally. There are several fair-sized colonies in precipitous places on the first dune from the beach, on the side facing the lake, near Millers. July 9, 1915, about three hundred, mostly young, were perching on the sand of the beach there or flying about aimlessly.

164. *Stelgidopteryx serripennis*, Rough-winged Swallow. A rare breeder. June 10, 1915, a pair was at the nesting hole in the same cottonwood in which the tree swallows were.

165. *Bombycilla cedrorum*, Cedar Waxwing. A locally common summer resident, and some will probably be found in winter, too.

The Bohemian Waxwing (*Bombycilla garrula*) has been reported once or twice from Whiting, Lake County.

166. *Lanius borealis*, Northern Shrike. Mr. Stoddard shot one of this species at Mineral Springs, December 23, 1916.

167. *Lanius ludovicianus migrans*, Migrant Shrike. A rather rare summer resident. There is a pair yearly building its nest at Mineral Springs, near the electric railway station; but that is the only pair I know of.

168-171. The Vireos are represented by the Red-eyed (*Vireosylva olivacea*) and the Warbling Vireos (*Vireosylva gilva gilva*) as summer residents, the former moderately common, the latter rare; and the Philadelphia (*Vireosylva philadelphia*) and the Blue-headed Vireos (*Lani-vireo solitarius solitarius*) as uncommon migrants. The Yellow-throated (*Lani-vireo flavifrons*) should be here, but we have not yet seen it.

In respect to Wood Warblers the Dunes are a disappointment, both as regards nesting and migrating ones. There must be something in the biological or physiographic conditions that is repellant to most species. In the woodland tract just south of the Dunes proper, they are abundant enough during migration, but in the Dunes only certain species as the Myrtle, Magnolia and Palm Warblers are, or they may be normally numerous at certain points where a large tract of woodland par-takes of the character of the non-dune forest, as at Tremont.

The following species breed here: The Black and White Creeping (*Mniotilta varia*), the Yellow Warbler (*Dendroica aestiva aestiva*), the Ovenbird (*Seiurus aurocapillus*), the Maryland Yellow-throat (*Geothlypis trichas trichas*), the Redstart (*Setophaga ruticilla*), the Chat (*Icteria virens virens*). Of these the Yellow-throat is the commonest, the shrubbery along the many pools proving congenial to it; next comes the Yellow Warbler, which is common in a few bushy pools near Millers and Dune Park, then the Ovenbird, but only at Tremont. The Black and White Creeper is not common, the Redstart still rarer, and the Chat has been found only one summer and in one place. The Pine Warbler (*Dendroica vigorsii*) and the Prairie Warbler (*Dendroica discolor*) probably breed here, since they each have been found once in breeding time or nearly so, as the latter, July 16, 1916, at Tremont by Dr. A. Lewy.

The following may breed here occasionally, as they have been found in all the adjoining area around the Dune region: The Worm-eating Warbler (*Helminthos rermivorus*), the Prothonotary Warbler (*Protonotaria citrea*), which nests abundantly at Kouts, Porter County; the

Blue-winged Warbler (*Vermivora pinus*), the Golden-winged Warbler (*Vermivora chrysoptera*), the Cerulean Warbler (*D. cerulea*), the Louisiana Water-Thrush (*Seiurus motacilla*), the Kentucky Warbler (*Oporornis formosus*), and possibly the Sycamore Warbler (*D. dominica albiflora*). The Louisiana Water-Thrush has been seen by Mr. Stoddard at Mineral Springs, May 5th, 1917, and it breeds abundantly just south of our region. The Cerulean I have found at South Bend and at Addison, Illinois, east and west of the Dunes, and is reported just to the south, too. The same holds good for the rest.

The following are the migrant warblers: The Nashville Warbler (*V. r. rubricapilla*), taken May 20th, 1916, at Mineral Springs; the Orange-crowned Warbler (*V. c. celata*), taken by me May 27, 1919, near Millers; the Tennessee Warbler (*V. peregrina*), which we took at Mineral Springs, May 20th and August 30th, 1916; the Cape May Warbler (*D. tigrina*), taken August 30th, 1916; the Black-throated Blue Warbler (*D. caerulescens*), seen April 24th, 1915; the Myrtle Warbler (*D. coronata*), the Magnolia Warbler (*D. magnolia*), the Chestnut-sided Warbler (*D. pensylvanica*), the Bay-breasted Warbler (*D. castanea*), the Black-poll Warbler (*D. striata*), the Blackburnian Warbler (*D. fusca*), the Black-throated Green Warbler (*D. virens*), the Palm Warbler (*D. palmarum*), the Northern and Grinnell's Water-Thrushes (*S. n. noveboracensis* and *S. noveboracensis notabilis*), the Connecticut Warbler (*Oporornis agilis*), taken May 21st, 1916, at Mineral Springs; the Mourning Warbler (*O. philadelphia*), seen in numbers by me May 27, 1919, along Long Lake; Wilson's Warbler (*Wilsonia pusilla pusilla*), and the Canada Warbler (*W. canadensis*), taken by Mr. Stoddard even so late as July 1st, 1917, at Tremont. Of these only the Myrtle, Magnolia, and Palm Warblers seem to be common during migration, while of species as the Black-throated Blue and Green, the Chestnut-sided, the Blackburnian, and others, usually so common in migration elsewhere, only one or two individuals are seen in a hunt of several hours in the most favorable places, such as was May 20th, 1916, at Mineral Springs. As Kirtland's Warbler (*D. kirtlandi*) has been reported from a number of points in surrounding country, it must almost of necessity also pass through here occasionally.

(Nos. 172-210.)

211. *Anthus rubescens*, Pipet. This has been reported from Liverpool, October 18, 1895, as quoted by Mr. Butler.

212. *Dumetella carolinensis*, Catbird. A common migrant and breeder. May 20, 1916, I saw about twenty at Mineral Springs.

213. *Toxostoma rufum*, Brown Thrasher. A less common breeder than the foregoing species.

214. *Thryothorus l. ludovicianus*, Carolina Wren. Since the Cardinal is here in some numbers, and the Yellow-breasted Chat has been seen a whole summer, this species should not be too uncommon, especially at Tremont, where conditions are ideal for it, but it is almost absent. Mr. Stoddard has taken one at Mineral Springs, November 25, 1916. I expect it to move into here, however, sooner or later.

215. *Troglodytes aedon parkmani*, Western House Wren. This is, over certain parts of our area, a rather common summer resident, notably on the first dune from the lake, between Millers and Dune Park, where it likes to make its nest in old, vine-covered stumps on the top of the dune.

216. *Nannus hiemalis hiemalis*, Winter Wren. A not uncommon migrant. They are commonest from April 1st to 24th (1916).

217. *Cistothorus stellaris*, Short-billed Marsh Wren. I have never seen a place where this species was so numerous, at least locally, as in this region. At Mineral Springs, in the large swale, there is a regular colony of them. May 29th, 1916, I counted about fifty here. Their song is a sharp "psit tsit tsit," ending in a trill that sounds like the knocking together of pebbles. Henslow's Sparrow is its neighbor here, as also the Marsh Hawk.

218. *Telmatodytes palustris iliacus*, Prairie Marsh Wren. This western form of the Long-billed Marsh Wren is extremely common in all larger cat-tail sloughs in the Dunes. They arrive about the middle of April. May 30th, 1916, I saw about 75 along Long Lake alone. Of the numerous nests seen, some contained two to three eggs. By July 18th their fully grown young still further increase their numbers. At Cary, Illinois, I found some in the marsh as late as October 17th.

219. *Certhia familiaris americana*, Brown Creeper. A common migrant. April 24th, 1916, I saw about 30 at Mineral Springs. I would not be surprised to find a pair breeding some summer at Tremont or nearby, as they have been found at Kouts, 25 miles south.

220. *Sitta carolinensis carolinensis*, White-breasted Nuthatch. A not common migrant and scarcer breeder. Even on great migration days not more than three or four are seen. This species seems to me to be decreasing in number over a large part of its range.

221. *Sitta canadensis*, Red-breasted Nuthatch. An even rarer migrant than the last species.

222. *Bucolophus bicolor*, Tufted Titmouse. A rare resident. Has so far been found at Tremont only, June 28th and December 23rd, 1916 (Stoddard).

223. *Penthestes a. atricapillus*, Chickadee. An abundant winter resident and moderately common breeder, mostly again at Mineral Springs and Tremont. March 11, 1916, a large flock was attacking cat-tail stalks

of the previous season along the edge of the tamarack swamp at Mineral Springs.

224. *Regulus satrapa satrapa*, Golden-crowned Kinglet.

225. *Regulus c. calendula*, Ruby-crowned Kinglet. Both are abundant migrants. In the cold spring of 1916, I saw about thirty of the latter as late as May 20th at Mineral Springs.

226. *Poliophtila caerulea*, Blue-gray Gnatcatcher. A rare migrant and breeder. April 18th (1914) is the earliest date I have for them.

227. *Hylocichla ustelina*, Wood Thrush. A rare summer resident, although it should be plentiful in such a fine place as Tremont.

228. *Hylocichla fuscescens fuscescens*, Veery. A not very common migrant. What percentage of them is the western form, *salicicola*, is hard to say without taking a great many, which one does not like to do. But the chances are that both occur.

229. *Hylocichla a. aliciae*, Grey-cheeked Thrush. On a few days during migration a more abundant species than the preceding, e. g., May 20th, 1916, when about ten were seen at Mineral Springs.

230. *Hylocichla ustulata swainsoni*, Olive-backed Thrush. Of about the same status as the foregoing.

231. *Hylocichla guttata pallasii*, Hermit Thrush. A somewhat more abundant migrant than the two preceding species. The earliest date we have is April 1st (1916).

232. *Planesticus m. migratorius*, Robin. In the Dunes proper a not very abundant summer resident. Some days in summer one sees only about two all day; more common about the farms along the southern edge of the Dunes.

233. *Sialia sialis sialis*, Bluebird. Also not so common here as in farming regions, but more so than the preceding. The earliest date I have is March 11 (1916), but they probably appear before this in mild seasons.

BIBLIOGRAPHY.

F. M. Woodruff, "Birds of the Chicago Area," 1907.

A. W. Butler, "The Birds of Indiana," 1897.

Some manuscript notes by Mr. H. L. Stoddard.

My own notes.