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KIRTLAND'S WARBLER (*DENDROICA KIRTLANDI*).

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Plate IV.

THE activity of field ornithologists during the past fifteen years has deprived most North American birds of the distinction of being termed rare. Species which a score of years since were known from only two or three specimens are now represented in collections by large series, continued research showing that their supposed rarity was due to our ignorance of their true range. Particularly is this true of the Warblers, birds whose habits make them especially difficult to observe; but one by one enthusiastic collectors have discovered their habitat, nests and eggs, until of all the North American members of this family, with the exception of several Mexican species just reaching our border, we can now write 'rare; nest and eggs unknown,' only of Kirtland's Warbler.

Forty-six years have passed since Kirtland's Warbler was made known to science. During this time nineteen specimens have been recorded from the United States and fifteen from the Bahamas. In addition to these specimens there exist thirty-three Bahaman specimens collected by C. J. Maynard making, as far as I can ascertain, a total of sixty-seven examples. A study

of the data attached to these birds fixes with considerable certainty the winter distribution of this species and throws some light on its routes of migration and probable breeding range.

Thus during the winter Kirtland's Warbler apparently ranges throughout the Bahamas, having been found from Caicos to Abaco, though it has not as yet been recorded from Inagua. Its northward migration begins in April, South Carolina being reached toward the end of the month, either by direct flight from the Bahamas, or, what is more probable, by advancing northward along the Southeast Atlantic Coast (St. Helena, April 29, Worthington).

This is the most northern, spring cis-Alleghanian record, the migratory route of the species now leading it northwestward into the Mississippi Valley.

It is reported from Missouri, May 8 (St. Louis, Widmann); from Illinois, May 7 (Glen Ellyn, Gault); from Indiana, May 4 and 7 (Wabash, Wallace); from Ohio, May 12 and 13 (Cleveland, Pease and Chubb; four other Ohio specimens without exact date); from Minnesota, May 13 (Minneapolis, Guilford), and from Michigan, May 11 (Battle Creek, Green), May 15, 16 (Ann Arbor, Covert; also one specimen about May 1, Knapp), and May 21 (Mackinac, Marshall). This last is not only the latest spring record but also the most northern record we have of the species. The specimen on which it is based was killed by striking the lighthouse situated at the Straits of Mackinac and, as I have before suggested, was doubtless *en route* to a more northern breeding ground in the Hudson Bay region.

In the fall we have only two records for Kirtland's Warbler (Ft. Myer, Va., Sept. 25, Palmer, and Chester, So. Car., Oct. 11, Loomis), suggesting that the species returns to its winter quarters over much the same route it selects for its northwestward journey in spring.

Few of the ornithologists who have been so fortunate as to secure specimens of this rare Warbler have given us any account of its habits. Mr. Cory, however, states of a specimen he secured on Andros Island: "Its actions much resembled those of *D. coronata*, and it seemed to prefer thick brush." Mr. Widmann compares it to *D. palmarum* and says that it has the

wagging motion of the tail, so characteristic of that species, that it appears to be terrestrial, and in the carriage of its body and manner of evading discovery by skilfully alighting behind a protecting object, it resembles *Geothlypis agilis*. Messrs. Smith and Palmer also mention the bird's habit of tail-wagging. Mr. W. O. Wallace states that the specimen secured at Wabash, Ind., May 4, was an active flycatcher, while the song of a second specimen consisted of "a loud, ringing note, repeated three times in quick succession. . . . It is loud and rather musical."

In addition to these records of collectors of the species we have several others by ornithologists who have observed but not secured it. Mr. Walter Hoxie states¹ that on St. Helena Island, South Carolina, May 3, when without his gun, he saw three Kirtland's Warblers, and gives his observations on their song and actions, as follows: "They were quite familiar, allowing me to approach cautiously within less than a rod. . . . The notes are of two distinct characters. The first, a song, was uttered with the head held forward and body quite erect. It bore a striking resemblance to the song of the Yellow-throated Warbler. The second was a loud chipping, uttered while moving about among the bushes, and was kept up for a space of one or two minutes at a time. Resting a few seconds the bird would begin again, creeping about the branches and 'swapping ends' with a quick jerking movement all the time. Arriving near the top of the bush or the end of the branch he would settle himself and sing two or three times before fluttering to the next bush. All these specimens were in low bushes and seemed to prefer them to trees. . . . neither did I see any of them alight on the ground."

Mr. L. S. Keyser, who observed a specimen of Kirtland's Warbler "one day in early spring" (locality not stated, but presumably in Ohio), describes its song as "a blithe, liquid melody," the tones being "full, clear and bubbling." (Bird-Dom, p. 63).

These brief notes constitute our sole knowledge of the habits of this species, whose nest and eggs, owing to its rarity and the remoteness of its probable breeding range, will doubtless long remain unknown.

¹Auk, III, 1886, 412.

LIST OF RECORDED CAPTURES OF KIRTLAND'S WARBLER.

1852. BAIRD S. F. *Ann. Lyc. Nat. Hist. N. Y.* V, 1852, 216, pl. vi.—Male, collected by Charles Pease, May 13, 1851, near Cleveland, Ohio.
Original description, wherein Prof. Baird dedicated the bird to J. P. Kirtland of Cleveland, not because he collected it, as has been uniformly but incorrectly stated, but because to him "we are indebted for a knowledge of the Natural History of the Mississippi Valley."
1860. KIRKPATRICK, J. [?]. *Ohio Farmer*, IX, 1860, 179.—Collected by—Darby, May (?), 1860, Cleveland, Ohio. A specimen is also said to have been shot by Wm. Case but to have been too badly injured to be preserved. (See Wheaton, *Birds of Ohio*, 264).
1865. BAIRD, S. F. *Rev. N. A. Birds*, 206.—Collected by S. Cabot, Jr., at sea, near Abaco, Bahamas.
This specimen was doubtless in existence ten years before the discovery of the type, having probably been secured by Cabot on his voyage to Yucatan about 1840.
1877. LANGDON, F. W. *Cat. Birds Vicinity Cincinnati, O.* (Salem, Mass.) 6.—Male, collected by C. Dury, May 1872, Avondale, O.
1879. WHEATON, J. M. *Bull. Nutt. Orn. Club*, IV, 1879, 58.—Two specimens collected at Rockport, Cuyahoga Co., O., "during past season," by W. and J. Hall.
1879. CORY, C. B. *Bull. Nutt. Orn. Club*, IX, 1879, 118.—Female collected on Andros Island, Bahamas, Jan. 9 (1879?).
1879. PURDIE, H. A. *Bull. Nutt. Orn. Club*, IV, 1879, 185.—Two females collected by A. B. Covert, Ann Arbor, Michigan, May 15, 1875, and May 16, 1879, respectively.
1880. LANGDON, F. W. *Fourn. Cin. Soc. Nat. Hist.* 1880, 123.—Female, collected by H. E. Chubb, Cleveland, Ohio, May 12, 1880.
1884. RIDGWAY, R. *Auk*, I, 1884, 389.—Male, collected by N. Y. Green, Battle Creek, Michigan, May 11, 1883.
1885. MERRIAM, C. H. *Auk*, II, 1885, 376.—Male, collected by Wm. Marshall, Straits of Mackinac, Michigan, May 21, 1885.
This is the most northern record for the species. The bird was killed by striking the lighthouse on Spectacle Reef, and was doubtless therefore *en route* to a more northern locality.
1885. WIDMANN, O. *Auk*, II, 1885, 382.—Male, collected at St. Louis, Missouri, May 8, 1885.
1886. HOXIE, W. *Auk*, III, 1886, 412.—Male, collected by W. W. Worthington, St. Helena, South Carolina, April 27. Also mentions 3 individuals observed by himself, May 3, but not secured.

1888. SMITH, H. M., and PALMER, W. *Auk*, V, 1888, 148.—Collected by Wm. Palmer at Ft. Myer, Virginia, September 25, 1887, where a second example was seen but not secured one week later.
1888. JENNINGS, A. H. *Johns Hopkins University Circular*, Vol. VII, No. 63.—Male, collected at New Providence, Bahamas, April 18, 1887.
1889. LOOMIS, L. M., *Auk*, VI, 1889, 74.—Collected at Chester, South Carolina, Oct. 11, 1888.
1889. WASHBURN, F. L. *Auk*, VI, 1889, 279.—Female, collected by — Knapp, at Ann Arbor, Michigan, about May 1, 1888.
1891. CORY, C. B. *Auk*, VIII, 1891, 295, 297, 298.—Three specimens, collected on Berry Islands, Bahamas, April, 1891; two specimens collected by C. L. Winch in January or February on Caicos Island, Bahamas; also recorded as collected by C. L. Winch on Abaco, Bahamas, in March.
1891. RIDGWAY, R. *Auk*, VIII, 1891, 337, 338. Four specimens, collected by naturalists of the Fish Commission S. S. 'Albatross,' on Watling's Island, Bahamas, March 4-9, and two by same collectors on Green Cay, Bahamas, April 12.
1893. GUILFORD, H. M. *Auk*, X, 1893, 86.—Male, collected at Minneapolis, Minnesota, May 13, 1892.
1894. GAULT, B. T. *Auk*, XI, 1894, 258.—Male, collected at Glen Ellyn, Illinois, May 7, 1894.
1897. BUTLER, A. W. *Birds of Indiana, Report of State Geologist*, 1897, 1070.—Two specimens, collected by W. O. Wallace at Wabash, Indiana, May 4, 1892 and May 7, 1895, respectively.

In addition to the 18 or more¹ specimens herein recorded from the Bahamas, I have received a list of 33 specimens of this species collected in these islands by Mr. C. J. Maynard, which I append: Nassau, N. P., 1884, Feb. 1, one; 12, two; 13, two; 20, one; 27, two; March 1, one; 11, one; 13, one; 15, two; 17, two; 22, two; 24, one; 26, three; 29, one; 1893, March 25, one; April 2, one; 1897, March, one; 4, one; April 5, one; 6, two.

Eleuthera Island, April 20, two; 22, one.

Athels Island, May 5, one.

NOTE.—Since this paper was put in type we have received from Mr. C. B. Cory a note recording the occurrence of Kirtland's Warbler at West Jupiter, Florida, in April, 1897, one example being seen on the 19th and one captured on the 27th of that month. See 'General Notes,' this issue of 'The Auk.'

¹ One record indefinite.