

WARBLER MIGRATION IN SOUTHEAST LOUISIANA
AND SOUTHERN MISSISSIPPI.

BY H. H. KOPMAN.

AS APPLIED to the conditions of bird migration in this vicinity, some of the deductions and generalizations made by Professor Cooke in his extremely interesting and instructive report on the 'Distribution and Migration of North American Warblers,'¹ give a slightly incorrect and incomplete view of the actual conditions of warbler migration in southeastern Louisiana and the middle Gulf coast of Mississippi. It should be said at the outset, however, that the records from which Professor Cooke drew, contributed by Andrew Allison and the writer, were circumscribed in many instances, owing to our imperfect opportunities for observation. It is not surprising, therefore, that in some cases our reports to the Biological Survey have failed to convey to Professor Cooke the real significance of the state of affairs to be exploited. The reports were in the nature, chiefly, of a series of categorical answers to categorical questions. It was unavoidable, therefore, that in many instances, the part of Professor Cooke's book relating to this locality and section should fail as to a precise definition of conditions.

Before taking up *ad seriatim* the species of warblers whose status in the above mentioned districts Professor Cooke has not made perfectly clear, I will touch upon two points of general application. The first concerns a mistake that would be made by anyone who had never visited this section of the country.

In the districts under consideration, there are two principal points from which we sent the reports that Professor Cooke used. One is Bay St. Louis, Miss., and the other is New Orleans. In many cases what might be said of a species at New Orleans would be true for that species at Bay St. Louis, for the latter point is only fifty miles east of New Orleans, and less than half a degree north. But on the other hand, assertions that fit some species at

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New Orleans are entirely inapplicable to the same birds as occurring in the piney country about Bay St. Louis. Species that arrive in numbers and with regularity at both places in spring and fall arrive at practically identical times, but there is a considerable number of birds which will be found in important numbers at one of these points at one season and not be found at the other. And this difference is of much more significance than might seem at first. New Orleans is on a rather low, alluvial plain, a country in large part swampy, with few characteristic tree growths except the water oak, the live oak, the tupelo gum, and the bald cypress. Bay St. Louis, on the other hand, is about fifteen miles east of the western limit of the piney belt in its coastward extension (the delta and immediate valley deposit of the Mississippi covering the lands about New Orleans that otherwise would be pine-bearing). Bay St. Louis, moreover, is on rather high ground, completely of white sand and red and yellow clay formations, and has a highly characteristic tree and shrub flora, of which the pines are most conspicuous. It can be seen, therefore, that many important distinctions in the avifauna are to be found when we compare the two districts. Some birds that migrate with regularity through the country about Bay St. Louis in spring, put in an appearance at New Orleans only occasionally, and *vice versa*. In the present instance, the trouble is that by far the larger part of the data have come from New Orleans, and the Bay St. Louis data, especially in regard to spring, have been used to supplement our reports for the New Orleans district. But the story of the migrations told us by the New Orleans records, is much more than supplemented, in many cases, by the observations made on the Mississippi coast. There are things brought out in the records from that district which we should never have discovered from the returns at New Orleans. In other words, the Bay St. Louis district is part of a distinct faunal area, and in its bearings to migration as well as to every other phase of bird-life, should be treated as such.¹

¹ Some of the differences between the avifauna of the fertile alluvial of southeast Louisiana and that of the pine districts to the north and east in Louisiana and Mississippi were pointed out by me in an article in 'The Gulf Fauna and Flora Bulletin,' Vol. I, No. 2.

The second point, and it is a matter upon which much difference of opinion might readily exist, concerns Professor Cooke's method of finding the average date of first arrival in spring. To add the number of days intervening each year between the first of the month in which the earliest record falls and the day of arrival for the year in question, and then to divide by the number of records, may be the best method to find the average date of arrival where the seasons are very consistent and regular; but in a region where there is occasionally a peculiarly abnormal year, the use of the record for such years vitiates the determination of the normal or typical time of arrival. Again, this is a matter that can be settled for any one region only by those who are on the ground all the time, and can use judgment in selection. The very late dates occasioned by late blizzards have been used by Professor Cooke in finding the average dates of arrival for this latitude. The records themselves do not in every case reflect the true state of affairs for certain seasons, because opportunities for observation in some of such years were limited, and the best date obtained was sent, though it might be known to be a late date. The necessary notes to that effect, it is true, were not appended in all cases. These circumstances aside, however, in this latitude at least, the average date of arrival in spring is the average of all records for normal seasons, though this statement applies better of course to the early part of the season, since a season rapidly catches up time once it has a good headway. It should be added that it would be as much of a mistake to include the date of arrival for one of our extremely forward springs as the date in a spring delayed by a blizzard. Including both extremes, one might expect to come reasonably near the practical rather than the ideal average, but in one case at least, that of the Hooded Warbler, Professor Cooke's method carries us considerably astray. The date upon which the Hooded Warbler appears most likely to arrive in a normal season is March 12. Professor Cooke, however, using the records available to him, determines the average date of arrival at New Orleans to be March 25. If one had a very full and trustworthy record, would not the best method, after all, be to settle upon that date which occurs most frequently? In the case of many species there would certainly be such a date.

This seems a more natural method than striking an ideal average date upon which the species may never have arrived!

1. BLACK-AND-WHITE WARBLER.—Professor Cooke calls attention to the lateness of the spring arrival of this species in southern Louisiana, where it is common only in fall. It is much commoner in spring at Bay St. Louis, and doubtless usually arrives there about March 20, the date on which Professor Cooke would expect to find it. We have but one complete spring record from Bay St. Louis; this is for the year 1902, and shows that the first Black-and-white Warbler came March 15, the next March 24, while the bulk of transients arrived April 10. The birds seen at New Orleans usually belong to the last designation, and that is the reason the arrival at New Orleans nearly always seems so much delayed, if it is detected at all. Professor Cooke thinks that the reason the Black-and-white Warbler usually delays its uncertain appearance at New Orleans is because the first migrants seek higher ground. The early arrival of the species on the coast of Mississippi shows, however, that this is only partly true; the difference in the character of the growth appears to explain the phenomenon, though, of course, this difference is partly associated with the altitude. Moreover, the Black-and-White Warbler was observed at New Orleans, Mar. 19 and 20, 1905.

2. PROTHONOTARY WARBLER.—Professor Cooke gives the average date of arrival at New Orleans as March 18. This is about as near the truth as one can come. It might be said that in normal seasons they would always be found by March 20, and not infrequently from one to three days earlier. In fact, there is a record of March 13, another of March 15, while twice the first has arrived March 19.

3. SWAINSON'S WARBLER.—Since the publication of Professor Cooke's book, we have established Louisiana records considerably earlier than any available to him when he was at work on his report. April 1, 1904, we heard about four in Jefferson Parish, opposite New Orleans, in a cane brake in thick, moist woodland where the species had been observed in April during several springs. On this occasion we took a specimen; several other specimens had been taken previously. It is not unlikely that the

birds seen April 1 had arrived with a general wave on March 30, and I observed the first, a single bird, on the latter date in 1905.

So far we have been unable to prove more than the fact that Swainson's Warbler is a regular transient in these woods, where we have seen it every spring we have looked for it since it was discovered there by A. B. Blakemore, April 11, 1896.

4. WORM-EATING WARBLER.—At New Orleans this species is decidedly rare, especially in spring. It is more common at points in the pinewoods north and east. Professor Cooke's quotations from our records apply chiefly to Covington and Bay St. Louis.

5. BACHMAN'S WARBLER.—In addition to the records cited, Andrew Allison saw one at Lobdell, West Baton Rouge Parish, La., May 9, 1903.

6. TENNESSEE WARBLER.—Our later records throw some little light upon the spring migration of this bird through southern Louisiana and Mississippi. In a small lot of warblers sent Andrew Allison, in the spring of 1902, from the lighthouse on Chandeleur Island, off the southeast coast of Louisiana, was a Tennessee Warbler that had struck the lighthouse April 13. While I had some dubious records of the occurrence of the Tennessee Warbler at New Orleans in the early part of April, it was not until 1903 that I saw the species, in spring, and then in some numbers, singing, and loitering to a degree that surprised me, for the first of these transients appeared April 26, and the last was noted May 9. They were restricted almost to one spot, a thicket of willows beside a pond in the suburbs of New Orleans. I observed others the latter part of April, 1905.

I once saw a specimen of a Tennessee Warbler that had been taken by H. W. Pring, in St. James Parish, fifty miles west of New Orleans, in March, but the exact date could not be supplied. The bird was killed probably about the 20th.

7. PARULA WARBLER.—It is deduced from the records furnished that the average date of arrival in spring is March 5, and the average time of first abundance is March 14. Practical experience here, however, suggests that the state of affairs would be slightly better indicated by approximating these two dates. One may always be fairly sure of seeing the first Parula at New Orleans March 7, while the species is usually abundant within three or four days.

8. **YELLOW WARBLER.**— There is undoubtedly a very restricted spring movement of this species, earlier than that which the majority of our records show. Dates of arrival as early as April 1 are rare, April 6, as Professor Cooke shows, being the average date when the first bird has been seen. However, in 1904, in the course of a twenty mile trip, March 30, I came across a single Yellow Warbler. Passing the same way the first of April, I found the bird still there. Ordinarily, one thinks to have done well in seeing this species at New Orleans or anywhere in that neighborhood, by April 3 or 4.¹

9. **BLACK-THROATED GREEN WARBLER.**— Professor Cooke is inclined to think that a specimen of this bird taken at Beauvoir, Miss., July 30, 1897, was an individual that had gone astray, and all the evidence of the fall migration of the species elsewhere supports his view. I am inclined to think, however, that parallel cases could be found, for while I positively recorded but one individual on the date mentioned, shooting that bird, which was an immature male, I saw several other birds that seemed to be of the same species. Furthermore, about July 23, 1896, in Madison Parish, northeastern Louisiana, I saw some birds that I feel well assured were Black-throated Green Warblers, but circumstances prevented a chance for either critical observation or identification by shooting. While the fall migration of the Black-throated Green Warbler appears to be much later, on the whole, than that of the Blackburnian, Bay-breasted, Cerulean, etc., I believe opportunities for further investigation of early migration on the Gulf coast might justify the belief that the Black-throated Green Warbler shares to a considerable extent in this early southward migration.

¹ It might be added here that what has been said of the Yellow Warbler applies to a large number of birds migrating through southeast Louisiana, or appearing there even as summer visitors. So often the first record of a bird, even after one has covered much territory, will be of a single individual, instead of the three or four, at least, that one might have expected to find. While this feature could hardly be called characteristic of this region, it is very noticeable, and because of it, a peculiar difficulty attaches to the collection of migration data here. It may be partly explained by the sameness of the country, so that the first arrivals are widely dispersed instead of being congested in some favorite localities.

10. PRAIRIE WARBLER.—Although the name of this species appears but a few times in our records, a fact noted by Professor Cooke, this was because it was observed only occasionally as an early migrant on the Mississippi coast, July 22, 1902, at Bay St. Louis, and July 28, 1897, at Beauvoir. Later in the summer, it has been seen on various occasions, and is by no means rare in the pine woods of southern Mississippi.

11. LOUISIANA WATER-THRUSH.—The records from this region available to Professor Cooke contained no instance of early arrival of this species in southern Louisiana, but March 19, 1904, I saw a single bird. This record makes it easier to understand the early arrival of the species at St. Louis, where Mr. Widmann has found it by March 29. Even so, our best date seems very late.

12. YELLOW-BREASTED CHAT.—While I was formerly inclined to agree with the opinion of Professor Beyer, quoted by Professor Cooke, that the Chat never reaches our district before the middle of April, having more recently seen the bird as early as April 11 (1903), I am inclined to think that in forward seasons at least, it is not so late a migrant as we had supposed.

13. HOODED WARBLER.—As before noted, the deductions made in regard to the arrival of the Hooded Warbler at New Orleans are considerably astray. March 12 is a normal time of arrival, and by March 25 it is nearly always abundant. The reason Professor Cooke has misunderstood the New Orleans records relating to this species is that some of them were for blizzard seasons, while others were made in seasons when opportunities for observation were limited. There is this, however, to be noted of the arrival of the Hooded Warbler in this section, that it comes much earlier at New Orleans and in identical country of southeast Louisiana, than at points in the pine woods or in some of the higher alluvial lands west of New Orleans, in other words, further up the river. This is no doubt because the species is so highly typical of the extremely low and wet alluvial lands of the southeastern corner of the State, and the legion breeding birds come to their stands there before the transients and smaller number of breeding birds have arrived at the higher lands. This is just the reverse of the case of the Black-and-white Warbler, for

the earliest birds of that species, transients in our latitude, pass hurriedly, and stop only in such kinds of country as most resemble their ultimate destination. In other words, as a general rule, their occurrence in the State in spring becomes extended from the higher lands to the lower as the season advances.

THE WINTER RANGES OF THE WARBLERS (MNIOTILTIDÆ).

BY W. W. COOKE.

MANY expert ornithologists have spent a great deal of time and care in working out the breeding range of each species of North American birds. No comparable effort has been bestowed on the question of the winter home, and as a result many loose statements are current in ornithological literature. There seems to be a tendency to consider any record south of the United States as a wintering record, whereas quite a number of species pass in migration through the West Indies or Central America to winter in South America.

The following tables show at a glance what part of the district south of the United States is occupied as a winter home and what is crossed in migration. It might be added that the charts are not designed to show anything with reference to the breeding range of any of these species; so that the statement, for instance, that *Protonotaria citrea* occurs in migration in the southeastern United States is not to be taken as indicating that it does not breed in that same district.

The tables are condensed from the Bulletin on the 'Distribution and Migration of North American Warblers' recently issued by the Biological Survey.