

Spindalis portoricensis (Bryant). PORTO RICAN SPINDALIS.—This specie was frequently seen in the citrus fincas and in the low vegetation growing along the beach at Boqueron.

Tanagra sclateri (Sundevall). PORTO RICAN EUPHONIA.—A male bird was collected near Mayaguez January 13, 1921. Natives coming from Arecebo sold many in the market-place at Mayaguez at fifty cents a piece, but in all instances I know of the birds soon died.

Loxigilla portoricensis (Daudin). PORTO RICAN GROSBEAK.—Observed on all trips to the coffee and citrus fincas in the foot-hills and mountains. A nest containing three eggs was collected near Mayaguez March 18, 1921.

Tiaris bicolor omissa (Jardine). CARIB GRASSQUIT.—A common resident observed throughout the regions visited on Porto Rico. Several pairs were noted nesting about my house. In each case the incubation period was eleven days. Several broods are raised each year by one pair.

Tiaris olivacea bryanti (Ridgway). BRYANT'S GRASSQUIT.—Occasionally seen in the coastal regions but more common in the mountains. I collected eggs November 22, 1921 at Maricao.

Coturniculus savannarum intricatus (Hartert). SANTO-DOMINGAN GRASSHOPPER SPARROW.—A flock of six birds were observed at Manati January 14, 1922 in the low bushes along the roadside. I did not see the specie on the western end of the island.

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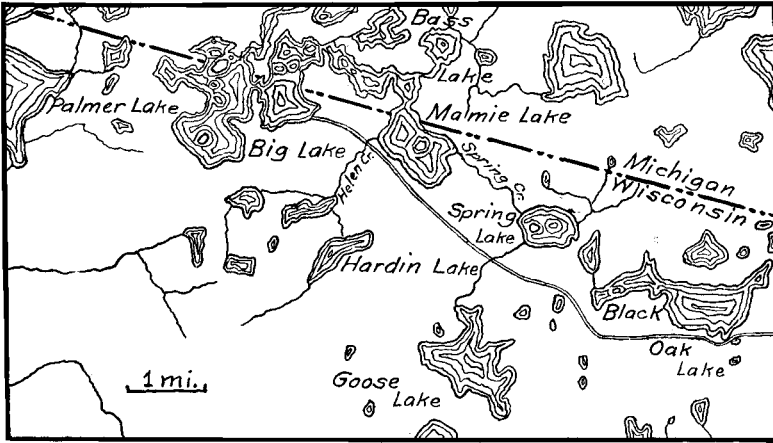
NOTES ON SUMMER BIRDS OF THE MAMIE LAKE REGION, WISCONSIN.

BY HARTLEY H. T. JACKSON.

Plates XXX

The list of birds here presented is a result of investigations in the region of Mamie Lake pursued as a part of a study of the distribution of the land vertebrates of Wisconsin under the auspices of the United States Biological Survey, the Wisconsin Geological and Natural History Survey and the University of Wisconsin cooperating. Two visits were made to the region; one extended from noon August 22 to the morning of August 31, 1917; the other from the afternoon of June 5, to the morning of June 24, 1918. During the first visit Dr. F. Gregory Hall was assistant in the work; during the second, Mr. Arthur J. Poole. Headquarters were

made at Bent's Camp, on the south side of Mamie Lake, both years. To Mr. B. R. Twombly, who resides at this camp, the writer is indebted for many courtesies and much assistance, which not only made our stay most pleasant and agreeable, but also made it possible for us to visit districts and secure results that otherwise would have been impossible.



MAP OF MAMIE LAKE REGION, WISCONSIN.

The region under consideration lies in northern Vilas County, Wisconsin, immediately adjacent to Michigan. In fact, the boundary line between the two states crosses the northern end of Mamie Lake, and a few of the observations, as indicated in the notes, were made in Michigan. The topography is typical of that of the lake region of northern Wisconsin; the surface is undulating, with numerous glacial hills and depressions; lakes, and bogs in various stages of formation, are characteristic of the area. The fauna and flora is largely representative of the Canadian life zone, among the plants being *Picea canadensis*, *Picea mariana*, *Abies balsamea*, *Larix laricina*, *Pinus strobus*, *Pinus resinosa*, *Pinus divaricata*, *Tsuga canadensis*, *Thuja americana*, *Taxus minor*, *Sorbus sitchensis*, *Prunus pennsylvanica*, *Acer saccharum*, *Acer spicatum*, *Acer pennsylvanicum*, *Betula papyrifera*, *Betula lutea*, *Cornus canadensis*, *Salix bebbiana*, *Populus tremuloides*, *Populus grandidentata*, *Ledum*

groenlandicum, *Kalmia glauca*, *Chamaedaphne calyculata*, *Gaultheria procumbens* and *Oxycoccus macrocarpus*.

Gavia immer immer. LOON.—Not a day passed on either of our visits to the region but that Loons were heard or seen. On June 16, 1918, a nest containing two eggs was discovered at the border of a small clump of flags in Bass Lake, just over the Wisconsin line, in Michigan. The eggs were left unmolested. Two days later, June 18, another nest containing two eggs was found at Spring Lake, two miles east of Mamie Lake. These eggs were highly incubated, one being blown with difficulty through a large hole. The other was placed under a setting hen at Bent's Camp where incubation continued. The young chipped and cracked the shell the morning of June 23, but died before leaving the egg, probably on account of insufficient moisture. The male parent of the Spring Lake set was collected. Although Bishop considers breeding Loons from Wisconsin to belong to his subspecies *classon**, this particular bird is easily referable to *Gavia immer immer*. It measures: Wing (following the natural contour, as did Bishop, l. c.), 403 mm.; tail, 92 mm.; exposed culmen, 90 mm.; tarsus, 93 mm.; outer toe with nail, 117 mm. The egg measures 89.4 × 54.4 mm.

Sterna hirundo hirundo. COMMON TERN.—A single bird was shot as it flew from a pine snag in Mamie Lake, June 16, 1918. Its ovaries were moderately developed. Its stomach contained two *Perca flavescens* each about 2.5 inches long. I saw a Tern which was probably this species at Lac Vieux Desert some 15 miles east of Mamie Lake, June 10, and on June 8, at the same place, Miss Polly Bent saw two Terns which she said were similar to the Mamie Lake bird. Such birds are reported to occur regularly in summer on Lac Vieux Desert, and it seems possible that a small breeding colony of these birds may exist on this lake.

Anas platyrhynchos platyrhynchos. MALLARD.—A few Mallards are reported to breed in the vicinity of Mamie Lake. A pair was seen there the evening of June 23, 1918.

Aix sponsa. WOOD DUCK.—A female with a litter of downy young was noted in a beaver pond on Spring Creek, June 13, 1918. Two young, probably of the above-mentioned litter, were seen near the bridge across Spring Creek the evening of June 20.

Marila affinis. LESSER SCAUP DUCK.—Two females of this species with ovaries only moderately developed, were collected on Mamie Lake, June 16, 1918. The birds were together, well out from the shore in deep water, when shot. I am inclined to believe they were non-breeding birds.

Botaurus lentiginosus. BITTERN.—Heard frequently at Mamie Lake, June 5 to 24, 1918. One was seen in a cattail marsh at the mouth of Helen Creek, June 7.

* Bishop, Louis B., Description of a new Loon, Auk, vol. 38, pp. 364-370, 1921.

Ardea herodias herodias. GREAT BLUE HERON. Common in the region where a dozen or more were observed each day of our visits (August 22 to 31, 1917, and June 6 to 24, 1918). During our June visit, one frequently alighted in the shallow water along the south shore of Mamie Lake where he had his accustomed fishing ground a few yards from our cabin. On two occasions he was observed to catch yellow perch (*Perca flavescens*) at least seven inches long.

Porzana carolina. SORA.—These birds were frequently heard in the grassy marshes on upper Spring Creek, June 7 to 23, 1918. During our visit in 1917, the only Rail seen or heard was a Sora which was caught, August 23, in a No. 1 steel trap set for a Marmot near a rock pile in a clover-timothy field 200 yards from marsh or water and at an elevation of 50 feet above either.

Tringa solitaria solitaria. SOLITARY SANDPIPER.—Solitary Sandpipers were encountered daily in the region August 22 to 31, 1917, where they were noted both near the lakes and along creeks. None was seen during June, 1918.

Actitis macularia. SPOTTED SANDPIPER.—Occasionally seen during June, 1918, particularly along the lower portions of Helen Lake. A nest containing four eggs seemingly fresh when tested by light, was found by the roadside 100 yards from Helen Creek bridge, June 10. The four eggs were still present June 17, but the following day, June 18, there were only two eggs, although the parent bird was still setting as she was up to the evening of June 23.

Oxyechus vociferus vociferus. KILLDEER.—It is reported that a few Killdeer regularly breed in the region. Two pairs were apparently nesting in the cornfield near Bent's Camp in June, 1918.

Canachites canadensis canace. CANADA SPRUCE PARTRIDGE.—Reported to occur, more particularly in a tamarack region about eight miles south of Mamie Lake. I spent two days hunting especially for this bird without success. Mr. B. R. Twombly informs me in a letter that a Spruce Hen was killed early in November, 1919, on Spring Creek where the road to State Line crosses it. He also told me in 1918 that he "shot one a few autumns ago near Bent's Camp."

Bonasa umbellus togata. CANADA RUFFED GROUSE.—For some reason, probably excessive hunting, but variously attributed to forest fires, wet breeding-seasons, and disease, Ruffed Grouse were rare in the region during the years 1915, 1916 and 1917. They seemed to be more plentiful near Mamie Lake in 1918 when they were frequently heard drumming (June 13 to 23) and one was seen flying across a logging road through an aspen thicket, June 10. A specimen was secured at Lac Vieux Desert, June 20, and one at Mamie Lake, June 22.

Cathartes aura septentrionalis. TURKEY VULTURE.—On August 31, 1917, while en route by automobile from Mamie Lake to Woodruff, Wisconsin, I saw near Little Arbor Vitae Lake what I felt reasonably sure was a Turkey Vulture, but, in view of the locality, I was not certain

enough to record it in my field report of that year. However, on June 17, 1918, I saw one, with no doubt as to its identification, flying across the State Line—Mamie Lake road between heavy timber 1½ miles southeast of Mamie Lake.

Circus cyaneus hudsonius. MARSH HAWK.—One in brown plumage seen near Mamie Lake, August 29, 1917.

Accipiter velox. SHARP-SHINNED HAWK.—A single bird noted at Mamie Lake, June 23, 1918.

Buteo platypterus platypterus. BROAD-WINGED HAWK.—During late August, 1917, this species was probably the most common Hawk of the region. One was noted June 17, 1918, a mile southeast of Mamie Lake, and the following day a pair flew across Spring Creek, just ahead of our canoe, a short distance above Mamie Lake.

Haliaeetus leucocephalus leucocephalus. BALD EAGLE.—Individual birds of this species were noted near Mamie Lake, August 27 and 29, 1917. One in immature plumage was seen perched high on a dead tree on an island in Mamie Lake, June 18, 1918. This bird was approached by canoe to within about 100 yards. The species is said to nest regularly at West Bay Lake, which lies some four miles west of Mamie Lake.

Cerchneis¹ sparveria sparveria. SPARROW HAWK.—One bird observed in a burned slashing near Mamie Lake, June 22, 1918. A few were noted in the region August 22, 23, and 29, the previous year.

Pandion haliaëtus carolinensis. OSPREY.—Frequently seen flying over the lakes of the region. Noted at Mamie Lake August 22, 1917, and June 13, 18 and 23, 1918.

Strix varia varia. BARRED OWL.—Two birds of this species were calling in heavy hemlock-maple woods near Mamie Lake about 5:00 P. M., August 27, 1917. The birds were distinctly heard for about 15 minutes.

Bubo virginianus virginianus. GREAT HORNED OWL.—Heard calling at Mamie Lake the evenings of August 25, 28, 29 and 30, and the morning of August 27 (5:00 A. M.), 1917, and the night of June 10, 1918. One was seen the evening of August 29, 1917, perched on the top of a tall dead white pine stub which rose high above the second-growth forest.

Streptoceryle² alcyon alcyon. BELTED KINGFISHER.—Common during both of my visits to the region, August 22 to 31, 1917, and June 6 to 24, 1918. During the latter period nesting cavities of these birds were frequently seen in cuttings through clay banks along roads, often nearly a mile from water.

Dryobates villosus villosus. HAIRY WOODPECKER. Hairy Woodpeckers were common during the last week of August, 1917, when numbers were seen, mostly in birch-aspen second-growth, but also in tamarack swamps. Others were noted June 10, 12, 21 and 22, 1918.

¹ *Falco* of A. O. U. Check List.

² *Ceryle* of A. O. U. Check List.

Dryobates pubescens medianus. DOWNY WOODPECKER.—The only birds of this species noted were five or six, possibly a family group, together in thin birch-aspen woods, August 23, 1917.

Picoides arcticus. ARCTIC THREE-TOED WOODPECKER.—On August 23, 1917, the only bird of this species seen during that visit to the region was shot as it was feeding on a dead tamarack in a small tamarack-spruce bog near Mamie Lake. During June the following year they were found moderately, but locally, plentiful in the heavier timber, particularly near burns and four specimens were collected, June 13.

Sphyrapicus varius varius. YELLOW-BELLIED SAPSUCKER.—Sapsuckers were not uncommon during June, 1918, particularly in heavy timber near burns, where they were found in the same environment as the Arctic Three-toed Woodpecker. The birds were common between Palmer and Big Lakes, June 13. A nest containing young was about 50 feet up in a red pine (*Pinus resinosa*) on a point in Little Africa Lake, Michigan, June 23.

Phloeotomus pileatus abieticola. NORTHERN PILEATED WOODPECKER.—One was seen in heavy timber between Palmer and Big Lakes, June 13, 1918. The next day two others were heard and seen in a dense, almost impenetrable tamarack swamp bordering Spring Creek, near Mamie Lake.

Melanerpes erythrocephalus erythrocephalus. RED-HEADED WOODPECKER.—Apparently uncommon in the region. Two were seen in birch-aspen woods near Mamie Lake, August 22, 1917, and one, June 14, 1918.

Colaptes auratus luteus. NORTHERN FLICKER.—It can not be said that Flickers are common in the region; two were noted on August 23, one on August 26, and one, August 28, 1917. One or two were seen nearly every day from June 8 to 24, 1918.

Setochaleis¹ vocifera vocifera. WHIP-POOR-WILL.—Not observed by me personally, but Mr. B. R. Twombly informed me that they occur very rarely near West Bay Lake.

Chordeiles minor virginianus. NIGHTHAWK.—Seen every evening June 5 to 23, 1918.

Chaetura pelagica. CHIMNEY SWIFT.—Plentiful June 5 to 24, 1918, but noted only twice in 1917,—two birds on August 23, and several on August 26.

Archilochus colubris. RUBY-THROATED HUMMINGBIRD.—Rather common at Mamie Lake June 6 to 28, 1918. The evening of June 22 no less than five birds, one male and four females, were feeding on the honey-suckles at Bent's Camp. Only one bird was noted in 1917, that one at Bent's Camp, August 26.

Tyrannus tyrannus. KINGBIRD.—Kingbirds were common in the vicinity of Mamie Lake, June 5 to 24, 1918. They inhabited for the most

¹ *Antrostomus* of A. O. U. Check-List.

part the overflowed land where they were characteristic birds perched on the dead snags and stumps. They nested on these same snags, the nests usually being five to eight feet above water. Nests containing eggs were noted June 12 and 23.

Nuttallornis borealis borealis. OLIVE-SIDED FLYCATCHER.—Frequently seen, singly and in pairs, near Mamie Lake, June 5 to 24, 1918. This bird prefers the borders of heavy coniferous forest near burns or slashings, or along overflows near creeks. Several birds, which behaved as if migratory, were observed in cut-over land August 26 to 29, 1917.

Myiochanes virens. WOOD PEWEE.—Of regular occurrence and fairly plentiful in the heavier deciduous timber or near the border of such timber, this bird was observed daily, June 5 to 24, 1918. During the 1917 visit the bird was observed frequently August 23 to 28, but none was seen after the 28th.

Empidonax trailli trailli. TRAILL'S FLYCATCHER.—A bird of this species seen at Mamie Lake, June 11, 1918, was shot but could not be retrieved. Another was noted at Lac Vieux Desert, some 15 miles east of Mamie Lake, June 20. Both were in alder thickets.

Empidonax minimus. LEAST FLYCATCHER.—A nest of this species, containing young nearly full-fledged, was located 12 feet above ground in an aspen (*Populus tremuloides*) at Mamie Lake, August 26, 1917. The species was seen and heard in numbers daily, June 5 to 24, 1918. The birds were partial to aspen-birch thickets, although a few inhabited the heavier hemlock-maple woods. A nest containing four eggs was found 36 feet above ground in a *Populus tremuloides* near the cottages at Bent's Camp, June 9. Another nest was located 60 feet above ground (an unusual height for this species) in a hemlock, June 16.

Cyanocitta cristata bromia.¹ BLUE JAY.—During the week of August 23 to 30, 1917, these birds were common, especially at the borders of heavy hemlock-maple timber. June 5 to 24, 1918, they seemed less abundant, but were seen daily. Groups of two to five birds were frequently seen, particularly at the border of heavy timber along the lake shores.

Perisoreus canadensis canadensis. CANADA JAY.—Four or five Canada Jays were seen in the heavy timber along Spring Creek between Mamie Lake and Spring Lake, August 30, 1917. One was shot, but it was lost in the thick brush and tall grass of a tamarack swamp. June 6, 1918, a group of two adults and one young was in the second-growth woods near the border of a small, thickly-timbered tamarack-spruce swamp. Another group of two adults and two young was in mixed woods along Spring Creek, June 12. Two groups were encountered in heavy hemlock-maple-spruce timber near Spring Creek, June 15; one contained two adults and three young, the other two adults and two young. Five specimens were saved.

¹ *cristata* of A. O. U. Check-List.

Corvus corax eurephilus. SOUTHEASTERN RAVEN.¹—Two Ravens were distinctly seen and heard in the dense timber near Mamie Lake, June 17, 1918. I was unable to get within gun-range of them, and they were not located again. It is said by residents that this bird is more plentiful in fall and winter than in spring and summer.

Corvus brachyrhynchos. CROW.—Crows were moderately common at Mamie Lake, where a few were seen daily both during August, 1917, and June, 1918. Unfortunately I secured no specimens, and it is possible that the crow of this region may be referable to the subspecies *hesperis*.

Molothrus ater ater. COWBIRD.—Common, a number seen each day, June 5 to 24, 1918. Not observed in August, 1917.

Agelaius phoeniceus predatorius. RED-WINGED BLACKBIRD.—Several pairs of Red-wings nested in the marshes along Helen Creek, near Mamie Lake, during June, 1918, being more particularly common near the mouth of the creek. They were also found along Spring Creek more especially near the source of it, but they were not plentiful there.

Quiscalus quiscula aeneus. BRONZED GRACKLE.—Abundant in the vicinity of Mamie Lake, June 5 to 24, 1918, where they were nesting in the dead stumps and snags in overflows, usually at the mouths of creeks. The nests for the most part were two to four feet above water, but were difficult of access in our canoe on account of logs, snags and fallen timber in the water. A nest contained four recently hatched young, June 7. Only two were noted in 1917, these in paper birches in cut-over land, August 23.

Carpodacus purpureus purpureus. PURPLE FINCH.—Occasionally noted near Mamie Lake (June 7 to 9, 12, 14, 21 to 23, 1918).

Astragalinus tristis tristis. GOLDFINCH.—Common during both visits to the region, late August, 1917, and June, 1918.

Spinus pinus pinus. PINE SISKIN.—This bird was common near Mamie Lake, June 5 to 24, 1918, where it was seen daily. A large flock was frequently feeding upon dandelion seeds near the cottages at Bent's Camp. What were apparently mated pairs were seen on several occasions (June 12 and 16) in hemlock-pine woods. The testes of one bird from such a pair were well developed. The genital organs of birds from the flocks were not enlarged and did not indicate breeding activity.

Poocetes gramineus gramineus. VESPER SPARROW.—Common in suitable habitats August 22 to 31, 1917, and June 5 to 24, 1918. Parent birds were seen carrying small green caterpillars to nestlings, June 16 and 18.

Zonotrichia albicollis. WHITE-THROATED SPARROW.—Common everywhere in slashings and burns, June 5 to 24, 1918. A few were usually present also in spruce-tamarack bogs, but rarely was one seen in heavy forest. This species was also moderately plentiful at Mamie Lake during late August, 1917.

¹ Included in *C. c. principalis*, A. O. U. Check List.

Spizella passerina passerina. CHIPPING SPARROW.—Birds of this species were apparently rare in the region during late August, 1918, the only two noted being in second-growth, August 25. They were common June 5 to 24, 1918, particularly in open or scrubby pine woods.

Junco hyemalis hyemalis. SLATE-COLORED JUNCO.—Juncos were common, especially at the border of small spruce bogs in slashings or second-growth, June 5 to 24, 1918. A nest containing five eggs was located in a shallow excavation, somewhat overgrown with moss, in the side of a steep bank along the road near Mamie Lake, June 8. The bird sat only moderately closely, usually leaving the nest when I was within eight to ten feet of her. June 14, the nest had been robbed of its eggs and torn apart, circumstantial evidence pointing toward a chipmunk (*Eutamias minimus neglectus*). The species was not abundant during late August, 1917.

Melospiza melodia melodia. SONG SPARROW.—Common in every suitable habitat both in August, 1917, and June, 1918.

Melospiza georgiana. SWAMP SPARROW.—This species was rather common in the grassy marshes along upper Spring Creek (June 11, 17 and 22, 1918), and a few were heard along Helen Creek (June 6, 9 and 12). It was also common in the grassy marshes along the Wisconsin River, just below Lac Vieux Desert, June 20.

Pipilo erythrophthalmus erythrophthalmus. TOWHEE.—Between June 7 and 23, 1918, one or two birds were seen nearly every day. They favored the second-growth woods and slashings.

Hedymeles¹ ludovicianus. ROSE-BREADED GROSBEAK.—Not common; individual birds were seen June 14, 16 and 23, 1918.

Piranga erythromelas. SCARLET Tanager.—One or two Scarlet Tanagers were seen nearly every day (June 9 to 23, 1918). They were most often noticed near the border of the heavier timber.

Progne subis subis. PURPLE MARTIN.—This was a common bird at Bent's Camp, June 5 to 24, 1918, where it was nesting in the cornices of buildings. A few were inhabiting dead timber in overflows where it seems probable they may have been nesting. August 22 to 24, 1917, several were seen near Bent's Camp, and on August 22 others, apparently young of the year, were noted among old stubs in burnt-over timber.

Petrochelidon albifrons albifrons. CLIFF SWALLOW.—About 300 Cliff Swallows were roosting on the telephone wires at Bent's Camp August 22 to 28, 1917; on August 29, only about 40 remained; and on August 30 and 31, only six. A few birds were nesting under the eaves of a barn at Bent's Camp, June 5 to 24, 1918.

Hirundo erythrogastra. BARN SWALLOW.—Common at Bent's Camp in June, 1918, where several were nesting in the boat-houses and a few in the barn. All the nests examined (June 8, 12, 19 and 22) con-

¹ *Zamelodia* of A. O. U. Check List.



1. Spring Lake, Vilas Co., Wisc.
2. Nest of Loon (*Gavia immer immer*), Spring Lake, Wisc.

tained young. Two were seen flying about the cottages at Bent's Camp, August 22, 1917, and one, probably of the same birds, August 23.

Iridoprocne bicolor. TREE SWALLOW.—Common near Mamie Lake, June 5 to 24, 1918, where many were nesting in Woodpecker excavations in dead timber in the overflows. A nest containing five eggs was found in a fence post by the roadside, June 7, the entrance to the cavity being in the top of the post. The eggs in this nest hatched June 12, and the young were still in the nest the last time I examined it, June 24.

Bombycilla cedrorum. CEDAR WAXWING.—A few birds were seen every day both in August, 1917, and June, 1918. A young one, two-thirds grown, was found on the ground under a balsam tree in which was the nest, August 28.

Vireosylva olivacea. RED-EYED VIREO.—Common during both of my visits to the region.

Vireosylva gilva gilva. WARBLING VIREO.—This bird was moderately common at Mamie Lake, June 5 to 24, 1918, where they were most plentiful in second-growth woods and slashings.

Mniotilta varia. BLACK and WHITE WARBLER.—Birds of this species were evidently breeding in region, individuals being met June 8, 12 to 15, 18, 22 and 23, 1918. A male, collected June 18, had enlarged testes.

Vermivora ruficapilla ruficapilla. NASHVILLE WARBLER.—This species was confined largely to the tamarack-spruce swamps where it was not uncommon from June 8 to 23, 1918. A specimen was also collected August 25, 1917, and another bird seen August 27.

Dendroica caerulescens caerulescens. BLACK-THROATED BLUE WARBLER.—A few Black-throated Blue Warblers occur around Mamie Lake, especially at the border of spruce-cedar thickets and among birch tangles. Birds were noted June 12, 13, 16, 22 and 23, 1918.

Dendroica coronata coronata. MYRTLE WARBLER.—Four Myrtle Warblers were observed in cut-over timber at Mamie Lake, August 23, 1917, and another was seen in the same place, August 25.

Dendroica magnolia. MAGNOLIA WARBLER.—Seen only at Lac Vieux Desert, some 15 miles east of Mamie Lake, where at least three nesting pairs were located June 20, and two specimens saved.

Dendroica pensylvanica. CHESTNUT-SIDED WARBLER.—This was a common Warbler in the Mamie Lake region from June 5 to 24, 1918. In places in scrub birches at the border of heavy woods or even in slashings, the birds were abundant and their characteristic call could be heard at all hours of the day. One was seen stripping shreds from the inner bark of a yellow birch log and carrying them for nesting material, June 10.

Dendroica fusca. BLACKBURNIAN WARBLER.—This bird was common in the region, June 5 to 24, 1918, its characteristic notes being heard daily. The birds themselves were difficult to discover, staying as they did, in the tops of the higher spruces and hemlocks. They seemed to be particularly plentiful in the heavy timber east of Hardin Lake. The species was most certainly breeding, the testes of the three birds collected being greatly enlarged.

Dendroica virens virens. BLACK-THROATED GREEN WARBLER.—Frequently heard, but seldom seen, in the tops of the higher trees in birch-hemlock-maple forest (June 10 to 23, 1918). One specimen was collected, June 12.

Dendroica vigorsii. PINE WARBLER.—Locally common in the pine woods (noted June 12, 13, and 23, 1918), particularly in *Pinus divaricata* and *Pinus resinosa*.

Seiurus auropallidus auropallidus. OVENBIRD.—A common and characteristic bird of the forests during June, 1918. A nest containing five eggs was found in the heart of heavy hemlock-maple-birch woods between Mamie and Spring Lakes, June 8. Two birds were noted near the border of the same forest, August 25, 1917.

Seiurus noveboracensis notabilis. GRINNELL'S WATER-THRUSH.—Locally moderately common in the region, birds noted June 8, 10, 16 and 18, 1918. On June 18, this species was almost abundant among the fallen logs on the wooded, springy bank of the east side of Spring Lake.

Oporornis philadelphia. MOURNING WARBLER.—Rather common, June 8 to 23, 1918, frequenting the denser thickets, either deciduous or mixed deciduous and conifer, usually on low, damp ground. Four males were collected, all with enlarged testes.

Geothlypis trichas brachidactyla. NORTHERN YELLOW-THROAT.—A few were found in thickets of alder, dogwood, and willows in grassy marshes, June 8, 13, and 18. The birds were nowhere common, but were most plentiful near Palmer Lake.

Wilsonia canadensis. CANADA WARBLER.—Birds of this species were not uncommon, especially in the bushes near the borders of tamarack-spruce bogs. Noted June 12, 15, 16, 21 and 22, 1918.

Setophaga ruticilla. REDSTART.—A few were seen and heard in the vicinity of Mamie Lake, June 11, 12, 17, 21 and 22, 1918.

Dumetella carolinensis. CATBIRD.—A single bird was seen in hazel and birch bushes near Mamie Lake, June 19, 1918. One bird was also seen August 22, 1917, in alders near Helen Creek.

Toxostoma rufa. BROWN THRASHER.—A single bird was observed in hazel and birch bushes at Mamie Lake, June 19, 1918. Mr. B. R. Twombly tells me that a pair is found at that particular place every summer. One was seen at Lac Vieux Desert, June 20.

Troglodytes aedon parkmanii. WESTERN HOUSE WREN.—Common everywhere among fallen logs and stumps in brushy cut-over land and burns, June 5 to 24, 1918, and August 23 to 30, 1917. A nest containing young recently hatched was located 7 feet above ground in a cavity in a paper birch stump, June 22. A male, collected June 13, is easily referable to *parkmanii*.

Nannus hiemalis hiemalis. WINTER WREN.—Occasionally seen near Mamie Lake, June 12, 13, 15 and 18, 1918. One was seen in dense hemlock-maple forest, August 25, 1917. A male, the testes of which indicated breeding was collected June 13.

Sitta canadensis. RED-BREASTED NUTHATCH.—One or more Red-breasted Nuthatches were seen nearly every day from June 8 to 23, 1918. They were also not uncommon during the last week of August, 1917.

Penthestes atricapillus atricapillus CHICKADEE.—Only moderately common, June 5 to 23, 1918, when a few, usually in pairs, were seen nearly every day. From August 23 to 28, 1917, they were more plentiful and were frequently observed, particularly in birch-aspen second-growth or at the border of hemlock-maple timber.

Hylocichla guttata faxoni.¹ HERMIT THRUSH.—Fairly common at Mamie Lake, where one or two were seen daily, and where several were heard singing each morning and evening, June 5 to 24, 1918. They preferred the environs of tamarack-spruce bogs, though a few were found in birch-aspen thickets.

Turdus² migratorius migratorius. ROBIN.—Common from June 5 to 24, 1918. A few were seen August 23 and 25, 1917.

Sialia sialis sialis. BLUEBIRD.—Speaking relatively to other regions of similar environment in northern Wisconsin, this bird was not common in the Mamie Lake region. From 2 to 4 or 5 individuals were seen each day, June 5 to 24, 1918.

U. S. Biological Survey, Washington, D. C.

THE BIRDS OF WELLINGTON AND WATERLOO COUNTIES, ONTARIO.

BY J. DEWEY SOPER.

THE conclusions arrived at, and the notes embodied in the following annotations are the result of ten years' bird-study in the counties of Wellington and Waterloo, Ontario. The greater portion of this time was spent in the southern part of both counties, principally at Rockwood, Speedside, Guelph and Preston; and was divided into two periods—from 1908 to 1912 and 1915 to 1921. Innumerable short driving trips at all seasons radiating into nearly every part of the country north of Kitchener, Bresleau, Elora and Fergus contributed greatly to my knowledge and conception of bird problems and conditions in that additional belt. Other outings penetrated quite to the northern end of the counties, but I can by no means claim familiarity with the avifauna of the extreme northern part.

¹*pallasi* of A. O. U. Check-List.

²*Planesticus* of A. O. U. Check-List.