

NOTES ON THE SPRING BIRDS OF TISHOMINGO
COUNTY, MISSISSIPPI.

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IN THE spring of 1904, a month's investigation of ornithological and botanical conditions in the valley of the Tennessee River, where it borders Mississippi, furnished me with some interesting material, upon which I base the remarks that follow.

Tishomingo County occupies the northeastern corner of Mississippi, adjoining Tennessee on the north, and Alabama on the east; the Tennessee River runs northwestward across the northeast corner, constituting the State line, and relieving the otherwise rectilinear character of the county boundaries. The valley of this river is very narrow on the Mississippi side, and the interrupted chain of hills rises again within a few hundred yards of the abrupt bank. These hills are the foot-hills of the Alleghanias; entering the State at this point, they extend southwestward, reaching their maximum elevation of 800 feet in Pontotoc County, and terminating in the extreme southwest, in Wilkinson County.¹

This county is a part of the Yellow Loam Region, which includes about one third of the State;² but, except in the narrow flood-plain of the Tennessee River, and the broader ones of certain important creeks, the soil layer is thin, and easily exhausted. Much gravel is present, and renders much of the land practically unfit for agriculture. The deep soil of the creek and river bottoms is a brown alluvial, of excellent fertility; and the natural growth of these bottoms, subject to frequent inundation, is rich and varied. But the points of geological interest are to be gathered from the hills; and turning to these again, we find them similar to those of northern Alabama, in that they are in large part underlaid by limestones of the drift formation. This limestone bed is so thick that in many cases the hills may be said to be made of it. In my notes I find this record:

¹ J. R. Preston, *Frye's Geography, Mississippi Edition.*

²For some of these remarks on the geology of the region I am indebted to Dr. Hilgard's report on the 'Geology and Agriculture of Mississippi.'

"In a hillside rising immediately beyond a most precipitous descent, is the main opening to a 'silica' mine [so called by the natives] which was abandoned because of the fatality among laborers working up the material — though the miners themselves were not affected. The walls of the cave are of an amorphous, softish, chalky material, now damp and covered in many places with slime and moss. The whole hill appears to be of this material, and so do many of the others near by. The main tunnel is about a hundred yards long."

In many places on the hills this limestone is present in the form of irregular pieces of blue stone about as large as a turkey's egg. A talus of this sort at the foot of the viciously steep little hills makes climbing very difficult; and often the same rock is encountered all over the hill. In large, flat pieces, often ten or twelve feet square, it forms terraced ledges through and over which the little streams run; and altogether it is the characteristic rock of the region directly bordering the Tennessee valley, where I spent the whole of the month at my disposal.

Though cropping out, as I have said, in many places, elsewhere this blue limestone underlies red sandstone; this I found to be the case near the town of Iuka. And between this point and my destination on the river, I crossed thick, level beds of the yellow loam, wooded with old-field and short-leaf pine (*Pinus taeda et echinatus*), and underlaid with a loose red sand — under which in turn was doubtless the limestone again.

In its flora and fauna this county presents characters of a rather transitional nature; a few examples will serve to show the mingling of species belonging to the Upper and the Lower Austral life-zones respectively — as these have been characterized by Dr. Merriam, — a decided predominance of Carolinian forms being evident.

Of mammals, I found most common the cotton-tail rabbit (*Lepus floridanus mallurus*); the white-footed mouse (*Peromyscus leucopus*); the chipmunk (*Tamias striatus*); the southern gray squirrel (*Sciurus carolinensis*); and the red bat (*Lasiurus borealis*). It will be seen that none of these are species confined to the Austro-riparian zone. The *Peromyscus* is not generally regarded as a southern species at all, and the chipmunk is placed by Dr. Merriam among the mammals of the Transition zone.

Other species were the water hare (*Lepus aquaticus*) and the opossum (*Didelphis virginiana*); of raccoons I could not be sure; but I found pawpaw seeds on logs by the creeks, which must have been left there by either these animals or opossums.

Reptiles were very uncommon, with the exception of two lizards, and all but one were species of rather general distribution. The two lizards referred to are *Sceloporus undulatus* and *Cnemidophorus sex-lineatus*; the Austroriparian *Anolis principalis* I saw rarely — once, oddly enough, on a spray of trailing arbutus! The only snakes I saw were the black form of *Bascanium constrictor*, and one individual of the “spreading adder” (*Heterodon platyrhinus*).

Breeding birds, absent in that capacity from most parts of the State, were: Catbird, Phoebe, Prairie Warbler, and Whip-poor-will; as I shall mention again below, I have hypothetically placed on the breeding list Goldfinch and Robin. But with all these mingle such distinctively southern species as Chuck-will’s-widow, Red-cockaded Woodpecker, and Mockingbird. Fuller remarks on these species will follow. Certain birds were noticeably absent — perhaps the most important being Loggerhead Shrike, American Sparrow Hawk, and Red-shouldered Hawk; but their absence was evidently due to local ecological conditions, and is of course of no importance in assigning this county to its place in the life-zones.

It remains now to sketch the flora. The low hills are thickly wooded, though large trees are the exception except in the valleys: old-field and short-leaf pine (*Pinus tarda et echinatus*), hickory (*Hicoria tomentosa*), dog-wood (*Cornus florida*), and numerous species of oaks compose the tree growth; while beneath them flourishes an undergrowth of Ericaceous shrubs.

The oaks are: black-jack (*Quercus marilandica*), post oak (*Q. minor*), scarlet oak (*Q. coccinea*), Spanish oak (*Q. digitata*), and chestnut oak (*Q. prinus*); and the principal species of huckleberry are: *Vaccinium stamineum* (a form with large leaves), *V. corymbosum*, *V. arboreum*, and a small species that seems most like *V. vacillans*. A tree commonly present, but fruiting little, and apparently of vanishing importance, as Dr. Mohr observes of it in Alabama, is the chestnut (*Castanea dentata*). On high summits another pine sometimes relieves the monotony of the common

short-leaf; this is *Pinus inops*. Somewhat local are the beautiful mountain laurel (*Kalmia latifolia*) and trailing arbutus (*Epigæa repens*).

Saxifrages are characteristic herbs of the rocky hills: they are *Saxifraga virginensis* and *Heuchera americana*. Other herbs are: early buttercup (*Ranunculus fascicularis*), white larkspur (*Delphinium virescens*), *Alsine pubera*, Indian pink (*Silene virginica*), bird-foot violet (*Viola pedata*), purple wood-sorrel (*Oxalis violacea*), *Houstonia purpurea*, "everlasting" (*Antennaria plantaginifolia*), and phlox (*Phlox reptans et amœna*).

The lesser valleys between the hills are fringed with the many-tinted "bush honeysuckle" (*Azalea nudiflora*), under which the bare damp earth is flecked with bluets (*Houstonia cœrulea*). Heavy shade, haunted of Wood Thrushes and Acadian Flycatchers, is cast by red maples (*Acer rubrum*) and white oaks (*Quercus alba*). In open places is found the snowberry or coral-berry (*Symphoricarpos symphoricarpos*). Here and there the hills are bordered by swamps; and here black gum (*Nyssa multiflora*); alder (*Alnus rugosa*) and 'bamboo' (*Smilax* spp.) grow, with ferns and white violets flourishing between. The only fern requiring special notice is a maiden-hair (*Adiantum pedatum*), growing on damp hillsides above the swamps.

By the brooksides grow crab-apple (*Pyrus angustifolia*) and red maple; over these clamber honeysuckle (*Lonicera sempervirens*), the naturalized Japanese honeysuckle (*L. japonica*), and bamboo (*Smilax rotundifolia*). Beneath grow spring beauty (*Claytonia virginica*) and anemone (*Syndesmon thalictroides*) in the shade, and cinquefoil (*Potentilla canadensis*) in the sun. Or, in lower places, thickets of alder and thin groves of small willows (*Salix nigra*) may form the stream-fringe.

The old fields in the narrow levels between brooks and hills grow the fragrant pink rose (*Rosa rubiginosa*); the feeble, trailing black-berry (*Rubus enslenii*); and of herbs, speedwell (*Veronica peregrina et arvensis*), 'johnny jump-up' (*Viola tricolor arvensis*), the little skull-cap (*Scutellaria parvula*), mouse-tail (*Myosurus minimus*); and a little evening primrose of some importance, because not reported heretofore, I think, from either Alabama or Mississippi — *Ænothera linifolia*. Thickets in these fields, as everywhere,

are tangles of blackberry (*Rubus argutus*) and sumac (*Rhus copallina*).

Or, in fields long abandoned, we may find scrubby pines (*Pinus taeda*), among rank 'broom-sedge' (*Andropogon virginicus*) that crowds out almost all other plants; though it gives place, here and there, to patches of wild plum (*Prunus chicasa*).

The low woods of the creek and river bottoms contain birch (*Betula nigra*), water oak (*Quercus nigra*), basket oak (*Q. michauxii*), sycamore (*Platanus occidentalis*),—present also along upland brooks—maple (*Acer dasycarpum*), sweet-gum (*Liquidambar styraciflua*), and cypress (*Taxodium distichum*). In higher ground in the valley are locust (*Robinia pseudacacia*), hackberry (*Celtis mississippiensis*), and sassafras (*Sassafras sassafras*). Common climbers on the border of these woods are trumpet creeper (*Tecoma radicans*) and cross-vine (*Bignonia capreolata*). And on the ground rising from the river I found wild strawberry (*Fragaria virginica*).

Roadside plants are haws (*Crataegus spathulata et mohrii*), moth mullein (*Verbascum blattaria*), and dandelion (*Adopogon dandelion*).

More enumeration would carry me beyond the limits set by the title of this article, which perhaps I have already exceeded; and without further preface I offer the detailed account of the birds observed from April 17 to May 17. The town of Iuka, several times to be mentioned, is about six miles southwest of the farmhouse which I made my headquarters, and is consequently out of the valley of the Tennessee River.

1. **Ardea herodias.** GREAT BLUE HERON.—One seen April 24, flying westward.

2. **Butorides virescens.** GREEN HERON.—Seen occasionally after April 21, at creeks and ponds.

3. **Fulica americana.** AMERICAN COOT.—I saw one swimming in a marshy mill-pond near Iuka, on April 30. The bird may have been a cripple; but if not, it was doubtless one of a breeding pair; for the next time I passed the spot, on May 17, it was still there.

4. **Actitis macularia.** SPOTTED SANDPIPER.—Sparingly present along the larger streams, and at the pond where I saw the Coot.

5. **Colinus virginianus.** BOB-WHITE.—A common bird in the open. It seems to nest quite late; for I flushed several pairs from their task of

constructing their domed nests under tussocks of *Andropogon*, after May 10, and found eggs but once.

I heard rather often a cry that I likened to the wild call of the Pileated Woodpecker; as the birds were flushed, they would dart off with this outburst of peculiarly wild sound; and the effect was startling. I think only the male uttered it; and at times I heard birds apparently answering each other, perhaps in challenge.

6. **Zenaidura macroura.** MOURNING DOVE.—Fairly common, and singing.

7. **Cathartes aura.** TURKEY VULTURE.—Common, not abundant.

8. **Catharista urubu.** BLACK VULTURE.—Much less common than the preceding.

9. **Elanoides forficatus.** SWALLOW-TAILED KITE.—One was seen May 12, flying northward, and accurately described to me.

10. **Accipiter velox.** SHARP-SHINNED HAWK.—Occasional after May 2.

11. **Accipiter cooperi.** COOPER'S HAWK.—Not abundant, but quite regular. On April 19 I found a nest, concerning which the female showed much solicitude. She sailed about, uttering a dry, monotonous rattle, but left when I climbed to the nest. It was about thirty-five feet up in a post-oak. A similar nest, out of repair, was in a tree close by, having doubtless formerly served the same birds.

The occupied nest had a heavy foundation of twigs, overlaid with rootlets; but it was lined with scales of pine bark, on which lay three short oval eggs, quite fresh, but slightly nest-stained.

12. **Buteo borealis.** RED-TAILED HAWK.—I think a pair bred on the hills back of the house in which I stayed; these were the only ones I saw.

13. **Buteo platypterus.** BROAD-WINGED HAWK.—The commonest of the hawks; I found no nests, but saw and heard the birds often.

14. **Haliaëtus leucocephalus.** BALD EAGLE.—A pair flew over, screaming, late in the evening of April 29.

15. **Syrnium varium.** BARRED OWL.—Rare.

16. **Megascops asio.** SCREECH OWL.—Heard one May 10.

17. **Coccyzus americanus.** YELLOW-BILLED CUCKOO.—This bird apparently did not arrive until April 28; after that date one or two were seen daily, until the bulk arrived May 3.

The habit of nocturnal song was very noticeable; I find these entries in my note-book: "May 1 At night I heard the full song of a Yellow-billed Cuckoo, delivered, I thought, while the bird was in flight." "May 8 Almost every night I hear the notes of Yellow-billed Cuckoos; I can rarely be sure whether or not they are flying; usually they are at rest, I think."

18. **Ceryle alcyon.** BELTED KINGFISHER.—Not common.

19. **Dryobates villosus audubonii.** SOUTHERN HAIRY WOODPECKER.—Common.

20. **Dryobates pubescens.** DOWNY WOODPECKER.— Common.
21. **Dryobates borealis.** RED-CKOKADED WOODPECKER.— Fairly common; very noisy, and not likely to be overlooked when present.
22. **Ceophlœus pileatus.** PILEATED WOODPECKER.— Common, and not especially shy; nor does it confine itself to the deeper forests.
23. **Melanerpes erythrocephalus.** RED-HEADED WOODPECKER.— Not common; it prefers large dead trees in clearings, and these are hardly to be had in this region. The same explanation can probably be offered in the case of the absent Sparrow Hawk.
24. **Centurus carolinus.** RED-BELLIED WOODPECKER.— Not uncommon; mainly confined to the creek woods. I noticed that it utters many of the notes of the preceding species; it is an undoubted fact that there is much local variation in the notes of this bird.
25. **Colaptes auratus.** FLICKER.— Common.
26. **Antrostomus carolinensis.** CHUCK-WILL'S-WIDOW.— Common; but less so than the succeeding species, and arriving later. I heard Whip-poor-wills from the night of my arrival in the valley, April 18, but the voice of this more southern bird was not added to the caprimulgine chorus until April 22. It was common after April 28.
27. **Antrostomus vociferus.** WHIP-POOR-WILL.— Very common. The song generally commenced about seven o'clock, on clear nights; and once I heard a Whip-poor-will cry at five in the morning. I heard none at all in bad weather.
28. **Chordeiles virginianus.** NIGHTHAWK.— Fairly common. None were seen until April 24, and I never noted the species as really common.
29. **Chaetura pelagica.** CHIMMEY SWIFT.— Common, and of normal habits. I found a nest in the chimney of a deserted cabin in the heart of the hills; and they nested also in the occupied farm-houses.
30. **Trochilus colubris.** RUBY-THROATED HUMMINGBIRD.— Common; the bulk arrived April 22.
31. **Tyrannus tyrannus.** KINGBIRD.— Fairly common; it did not arrive in breeding numbers until about May 1, and never became abundant.
32. **Myiarchus crinitus.** CRESTED FLYCATCHER.— Common from the time of my arrival
33. **Sayornis phœbe.** PHŒBE.— I thought I heard one of these birds on April 18, and later on I discovered it to be a rare breeder. In the tunnel I have before referred to, cut in the rotten limestone of a steep hillside, I found a nest perched on a narrow ledge about six feet up. It was composed externally of green moss, and contained four young a few days old; they were silent, unemotional little creatures, and made no demonstration when I took the nest down to see them more closely, or when I replaced it.

The mother waited outside the tunnel, calling frequently. It struck me as singularly appropriate that the first rocky cave I had entered in Mississippi should hold a Phœbe's nest; for in less typical situations we have never noted the bird except as a winter resident.

This was on April 27; the next day I found an old nest — probably of the same pair, since I saw no others — in an abandoned cabin near the cave.

34. **Contopus virens.** WOOD PEWEE.— Common.

35. **Empidonax flaviventris.** YELLOW-BELLIED FLYCATCHER.— I took one May 9, from a flock of migrant warblers.

36. **Empidonax virescens.** GREEN-CRESTED FLYCATCHER.— Common; I noticed it first April 23, and found it common about May 3.

[**Empidonax traillii.** TRAILL'S FLYCATCHER.— On April 26, and on one or two other dates, I thought I saw this flycatcher; but each time I failed of positive identification.]

37. **Empidonax minimus.** LEAST FLYCATCHER.— I took one May 10. It was quite silent, but active, making short excursions from a sparse thicket of sumac and blackberry, and always perching in a scrupulously erect position.

38. **Cyanocitta cristata.** BLUE JAY.— Fairly common; but the small oaks of the hills tempt it less than the larger trees about the town. I found it common in Iuka.

39. **Corvus brachyrhynchos.** AMERICAN CROW.— Common.

40. **Dolichonyx oryzivorus.** BOBOLINK.— This bird I observed three times; on April 30 I saw a flock of about twenty males in an open pasture near Iuka; the next day another flock was reported from a point near the river; and a single female flew over on May 6.

41. **Agelaius phoeniceus.** RED-WINGED BLACKBIRD.— A very local breeder in low fields and marshy ponds, of which situations there are not sufficient to make the bird abundant.

42. **Sturnella magna argutula.** SOUTHERN MEADOWLARK.— Not at all common.

43. **Icterus spurius.** ORCHARD ORIOLE.— A fairly common breeder. I saw several at Grand Junction, Tennessee,— about a hundred miles northwest of Iuka,— on April 16; but the species did not reach this valley until April 23, becoming common about the same time.

44. **Icterus galbula.** BALTIMORE ORIOLE.— I saw this bird also at Grand Junction on April 16, but saw none here until April 24, and none after April 29. It seems unwise to base conclusions on a month's record, but the natural deduction would be, that this valley is a sort of pocket and receives by degrees the overflow from the Mississippi Valley migration stream; though it will be seen from the notes to follow, on the warblers, that this region lies — for some species at least — in a line of migration not originating in the Mississippi Delta. The same theory will not apply to all the species mentioned here, but I offer the above as an explanation of an apparently paradoxical situation.

45. **Quiscalus quiscula seneus.** BRONZED GRACKLE.— Breeds commonly in a low wooded park in Iuka; but I saw it only once near the river, on April 28.

46. **Carpodacus purpureus.** PURPLE FINCH.— I saw many females

in the above-mentioned park, on April 17; and the next day I thought I saw several among pine-trees on the hills near the river.

47. *Astragalinus tristis*. AMERICAN GOLDFINCH.—Probably resident. I found much migrational activity when I arrived — April 17 — and the finches continued to flock and sing until April 27; after that date I saw them passing over in pairs, and find them recorded as “constantly passing over” as late as May 6; and I took one of a mated pair on May 7. I found no nests; but I left with a very distinct impression that Goldfinches breed in the Tennessee Valley in Mississippi.

48. *Passer domesticus*. ENGLISH SPARROW.—Present about the farm-houses near the river, and common in Iuka.

49. *Poocetes gramineus*. VESPER SPARROW.—Saw one in a meadow near Iuka, April 17.

50. *Chondestes grammacus*. LARK SPARROW.—A very handsome individual was feeding with a group of Chipping Sparrows in the Iuka park, on April 17. Of late we have found it not very uncommon in winter on the Gulf coast of Mississippi, but this is our only interior record, though Mr. H. H. Kopman has reported it from Madison Parish, Louisiana, directly across the Mississippi River from Vicksburg.

51. *Zonotrichia albicollis*. WHITE-THROATED SPARROW.—Very abundant in thickets and hedge-rows. I heard them singing as soon as I arrived at my destination, and frequently I found the hillsides covered with the creeping, rustling little creatures, and the thickets bordering the hills deserted; but they withdrew to cover again immediately on any alarm. The bulk left about May 4, and I saw the last May 9.

Once I heard a rather peculiar song that led me to suspect the presence of *Z. leucophrys*; but I soon traced it to its source as an individual peculiarity.

52. *Spizella socialis*. CHIPPING SPARROW.—Abundant everywhere, except in the extremely open country occupied by the following species.

53. *Spizella pusilla*. FIELD SPARROW.—Common in the old fields grown up with *Andropogon*. One of the several nests I found was placed in a tussock of this grass; it was situated among the culms much as the nest of a Red-wing is placed among reeds. It contained four eggs on May 12.

54. *Peucaea aestivalis bachmanii*. BACHMAN'S SPARROW.—Of local distribution, but not uncommon. This is a most interesting bird, and varies much in its habits in different regions; even in the same locality there may be two quite dissimilar songs, as I noticed here,—one quite like that of the Field Sparrow, one like that of the Chipping. The birds of this county are larger and grayer than those of the Gulf coast,—less typical of the subspecies; and they prefer the open country to the pine barrens. I have these notes of their behavior: “I found Bachman's Sparrows again on the border of the pine thicket; they behaved somewhat like Swamp Sparrows in the brush, though on the ground they ran rapidly, flushing from it with the explosive spring of *Coturniculus* or *Passerculus*. One wandered into the thick sedge-grass (*Andropogon*).”

55. **Melospiza lincolni.** LINCOLN'S SPARROW.—This is another very interesting species. We have never been able to detect it in any other part of the State, and I watched its movements closely after I found it here April 23.

It proved to be not uncommon, and lingered until May 15. Generally I found them singly, creeping about in some thicket or hedge-row; but sometimes they crept about fences in a rather wren-like way; and one deepened this impression by concealing itself in a pile of cross-ties by the roadside. After May 10 I watched one whose quarters were in a brush-pile by a brook; it often sang, gliding about like a House Wren, a fine liquid warble much like that of this wren, but of sweeter, lower tone, and much longer duration.

56. **Melospiza georgiana.** SWAMP SPARROW.—I saw none before April 25; it was fairly common April 27, increased May 3, decreased again May 4, and was last seen May 6.

57. **Pipilo erythrophthalmus.** TOWHEE.—Common, and showing no evidence of migratory habits.

58. **Cardinalis cardinalis.** CARDINAL.—Common, and singing finely and constantly.

59. **Zamelodia ludoviciana.** ROSE-BREADED GROSBREAK.—I saw a very handsome male on May 2, with a flock of Bay-breasted Warblers; it uttered a peculiar and indescribable note.

60. **Cyanospiza cyanea.** INDIGO BUNTING.—This species became very abundant April 24 — the first I saw of it. These were mostly males. I heard one sing at night on April 30. It was present mainly in the capacity of a migrant until about May 3, when its numbers decreased; another wave passed through May 9; by May 14 all but breeders were gone, I think, and I found a nest with two eggs on May 15. The birds were very shy, and I saw the brooding mother only after several stealthy approaches.

61. **Piranga erythromelas.** SCARLET TANAGER.—First seen in Iuka April 17; the next appeared April 22, after which I found them fairly regular until the last left on May 12. Nearly all were males, but I heard the song only once.

62. **Piranga rubra.** SUMMER TANAGER.—This bird appeared April 19, and was common after April 25.

63. **Progne subis.** PURPLE MARTIN.—Common in Iuka when I arrived. But evidently migration was not over; for on April 21 a flock of about fifteen martins suddenly appeared, silent as spirits, and alighted in a huddled group on a dead tree near me. On May 3 and 5 a pair prospected without success, probably seeking a site for a second nest, in a sparrow-haunted martin-box near the house where I stayed.

64. **Hirundo erythrogastra.** BARN SWALLOW.—Present from the time of my arrival until May 11; but never common, and rarely singing.

65. **Iridoprocne bicolor.** TREE SWALLOW.—I saw some with Rough-winged and Barn Swallows flying over a meadow near Iuka, April 17.

66. **Stelgidopteryx serripennis.** ROUGH-WINGED SWALLOW.—I found

no nests, but the species was evidently breeding in the limestone banks of the brooks near the river, as well as in suitable places near Iuka. I thought often that Bank Swallows must be mingled with the Rough-wings, but careful search revealed none. One individual I saw was characterized by a white tail-feather.

67. **Ampelis cedrorum.** CEDAR WAXWING.—A small flock appeared May 6, and some may have remained to breed; but I heard them last on May 16; and, since even at New Orleans they may be seen all through May, no special significance attaches to their presence here at such a date.

68. **Vireo olivaceus.** RED-EYED VIREO.—The commonest breeder of the region; present continuously, and abundant from April 22.

[**Vireo philadelphicus.** PHILADELPHIA VIREO.—I saw one at Grand Junction, Tennessee, on April 16; it was on the border of an oak grove wherein were other migrants.]

69. **Vireo flavifrons.** YELLOW-THROATED VIREO.—Not common as a breeder, but quite so as a migrant up to the last week of April. The song is distinguishable from that of the Red-eye by its greater depth, richness, and deliberation.

70. **Vireo noveboracensis.** WHITE-EYED VIREO.—A very common breeder.

71. **Mniotilta varia.** BLACK-AND-WHITE WARBLER.—Present from the first, and abundant nearly throughout my stay, though fluctuating in numbers. I found it fairly common on May 20 in Amite County, nearly four degrees further south; and I therefore cannot assign May 14—the day I last saw it in Tishomingo County—as the end of its spring sojourn. It certainly breeds.

The great versatility of this warbler in vocal effects was well illustrated during this time; I know of no other warbler except the Chat that can produce so great a variety of sounds; and since nearly all of the notes resemble those of other warblers, this is a most confusing bird to deal with during the busy season of "waves."

72. **Helminthus vermivorus.** WORM-EATING WARBLER.—Present from the first, and common until quite late; it ceased to be apparent during the latter part of my stay, but I found it with *Mniotilta* in Amite County.

73. **Helminthophila pinus.** BLUE-WINGED WARBLER.—I first observed it April 18; it became common April 21, and thereafter fluctuated until May 8, after which it remained common in the open regions bordering woods. Its monotonous song, generally uttered at short intervals from near the top of a tree, while the singer sat motionless, was a familiar sound.

74. **Compsothlypis americana ramalinae.** WESTERN PARULA WARBLER.—Several very diverse specimens of this species were all referred by Mr. Oberholser to this subspecies. It was never common, and as a breeder it seems rare.

75. **Dendroica tigrina.** CAPE MAY WARBLER.—I took a male from a flock of migrant warblers on May 4. This is the first record for Mississippi,

and there is but one for Louisiana—also a spring record, from New Orleans. Evidently this species is one of those not entering the Mississippi Valley route by way of the delta.

76. **Dendroica aestiva.** YELLOW WARBLER.—Sparingly present from April 17 to May 1.

77. **Dendroica caerulescens.** BLACK-THROATED BLUE WARBLER.—I saw a male on April 29, with other migrant warblers. This is another bird new to the State list, and almost unknown in Louisiana.

78. **Dendroica coronata.** MYRTLE WARBLER.—Very common, in bright, though incomplete, plumage, and fine song, up to April 26; after this less common until it left on May 5.

79. **Dendroica maculosa.** MAGNOLIA WARBLER.—A late migrant, as it is everywhere in the State. I saw it first on May 3, and it was present rather commonly until May 16.

80. **Dendroica pensylvanica.** CHESTNUT-SIDED WARBLER.—I took a male on May 9; it was in fine song — a long warble like that of House Wren.

81. **Dendroica castanea.** BAY-BREASTED WARBLER.—Very common from time to time, but always in close flocks. It mingled freely with other species, but it was very noticeable that the two sexes of this species were rarely to be seen in the same group. I also found that it showed rather a fondness for pine trees, when these occurred among the oaks, which was not shared by any of the other migrant warblers. I saw the first April 29, and the last May 9.

82. **Dendroica striata.** BLACK-POLL WARBLER.—Common in varying degrees from April 26 to May 3; these were almost all females. After this came a period of rarity, and the last—one of the few males seen was taken on May 12. This one was singing a feeble cricket-like song, and after long search I discovered it actively exploring the branches of a Spanish oak on the border of a field.

83. **Dendroica blackburniæ.** BLACKBURNIAN WARBLER.—Rather common from April 27 to May 5. Males predominated, and sometimes sang their weak imitation of Indigo Bunting's song.

84. **Dendroica virens.** BLACK-THROATED GREEN WARBLER.—Present from April 23 to May 10; generally common, though flocking less than some of the other species; and well distributed. I noticed two distinct songs, neither strikingly original: one, a rather featureless trill, I have described in my notes as "Paruloid"; the other smacked strongly of the Chickadee's notes.

85. **Dendroica vigorsii** PINE WARBLER.—Abundant, and very noisy.

86. **Dendroica palmarum.** PALM WARBLER.—It seems singular that this form of Palm Warbler should occur here, in place of *D. p. hypochrysea*, our common Mississippi coast form; but this was the case, and on one day it was very abundant. I first noticed it April 19—though it doubtless winters — and on April 22 it was abundant with other warblers in *Vaccinium* undergrowth on the hillsides; after this it was not abundant, but lingered until May 6.

87. **Dendroica discolor.** PRAIRIE WARBLER.—A common breeder in the cleared regions that have grown up in thickets; and an abundant migrant, its wiry trill being sometimes one of the conspicuous bird voices of the hillsides. I first heard it April 19; found it abundant with Palm Warbler April 22; after April 23 the residents scattered, and the great majority left the woods for the fields.

88. **Seiurus aurocapillus.** OVENBIRD.—I was sure of seeing this usually common bird only once; I took one May 4.

89. **Seiurus motacilla.** LOUISIANA WATER-THRUSH.—A breeder along the brooks and creeks, but not common. I first heard it April 19, uttering its clear, far-reaching song by the side of a rocky brook.

90. **Geothlypis formosa.** KENTUCKY WARBLER.—Present at the time of my arrival; less common later, the surplus probably passing to wider bottom-lands as was doubtless the case also with Black-and-white, Worm-eating, Western Parula, Hooded Warblers, and Redstart.

91. **Geothlypis trichas brachidactyla.** NORTHERN YELLOW-THROAT.—The Yellowthroats I collected on this expedition are now in the hands of Mr. F. M. Chapman, and have not yet been passed upon; but I refer them provisionally to this subspecies. It is common in suitable localities.

92. **Icteria virens.** YELLOW-BREASTED CHAT.—Very common in alder and blackberry thickets. First noted April 23, when it was tolerably common; the bulk arrived about May 1. I found nests with eggs on May 10 and 16.

93. **Wilsonia mitrata.** HOODED WARBLER.—Common when I arrived, and present through my stay; but of course absent from the hills after about May 1.

94. **Wilsonia canadensis.** CANADIAN WARBLER.—First seen May 3, last seen May 11. Tolerably common, but always single; it was very active, and often sang a pleasing little lay possessing well-marked generic characters.

95. **Setophaga ruticilla.** AMERICAN REDSTART.—I saw a female on April 24, and noted the last of the hill migrants soon after this. Doubtless I could have found breeders in the swamps later than this. It was at no time common.

96. **Mimus polyglottos.** MOCKINGBIRD.—Not very common. I found a nest containing three eggs on May 10, and by May 14 the young were hatched.

97. **Galeoscoptes carolinensis.** CATBIRD.—A very common breeder, and a very abundant migrant. On April 24 Catbirds were everywhere; but they soon settled down to breeding numbers; and on May 14 and 16 I found nests with full sets of eggs.

98. **Toxostoma rufum.** BROWN THRASHER.—Doubtless a constant resident; its numbers underwent no fluctuation while I remained, and it was always a familiar bird of the thickets. I found a nest with eggs on April 25; these did not hatch until about May 9. On May 15 I found another nest with two eggs.

99. **Thryothorus ludovicianus.** CAROLINA WREN.—A common resident.

100. **Thryomanes bewickii.** BEWICK'S WREN.—Not common; but evidently it breeds about the farm-houses, and also in Iuka; and I saw a pair at Grand Junction, Tennessee, on May 17. Though less exuberant than the foregoing, this wren seems to be always in song.

101. **Troglodytes aëdon.** HOUSE WREN.—Not common; I saw the last April 27.

102. **Sitta carolinensis.** WHITE-BREADED NUTHATCH.—Not very common.

103. **Sitta canadensis.** RED-BREADED NUTHATCH.—I saw one of these birds at Grand Junction, Tennessee, on April 16, in an oak grove with other migrants; and on April 28 I saw a pair on a high hill near the river. The male was sitting quite motionless at first, uttering a wild, querulous, long-drawn cry, which seemed to be a call for the female; for the latter soon appeared, and the male then resumed his wonted voice and activity.

104. **Sitta pusilla.** BROWN-HEADED NUTHATCH.—Common.

105. **Bæolophus bicolor.** TUFTED TITMOUSE.—Very common.

106. **Parus carolinensis.** CAROLINA CHICKADEE.—Less common than the preceding.

107. **Regulus calendula.** RUBY-CROWNED KINGLET.—Present, in less than winter numbers, and singing, until May 1.

108. **Poliophtila cærulea.** BLUE-GRAY GNATCATCHER.—Already common when I arrived.

109. **Hylocichla mustelina.** WOOD THRUSH.—One of the commonest breeders; I found the nests of past seasons in every little hollow, though I failed to locate any occupied. It was present when I arrived, and I saw it also at Grand Junction, Tennessee, on April 16.

110. **Hylocichla fuscescens.** WILSON'S THRUSH.—Not common; first seen April 20, last seen May 3.

111. **Hylocichla ustulata swainsonii.** OLIVE-BACKED THRUSH.—Sparingly present from May 2 to May 16.

112. **Hylocichla aliciae.** GRAY-CHEEKED THRUSH.—Quite uncommon; first seen April 22, last seen May 5.

113. **Hylocichla guttata pallasii.** HERMIT THRUSH.—Decreased gradually from fair numbers, until the last left on April 26.

114. **Merula migratoria.** AMERICAN ROBIN.—This bird probably breeds in the wooded park at Iuka; I had no opportunity to go there when I passed through the town on May 17; but I had seen there, on April 30, birds that I supposed to be breeding. The last near the river passed through May 3; there were three. I took a female, and found her very fat, but in poor plumage.

115. **Sialia sialis.** BLUEBIRD.—Common. Parent birds were leading about fledged and flying young on May 13; but a nest found May 11, in a hollow fence-post, contained five eggs.