

warden, who also saw this bird while I watched it, remarked that it was the first "curlew" he had ever seen here. The subspecific identity of this bird is, of course, questionable; Dawson does not attempt to designate the geographic race to which belongs the single specimen mentioned in his "Birds of Ohio."

GOLDEN PLOVER. *Pluvialis dominica dominica*. Two observed September 16, 1923. Although once common as an Ohio bird its recent scarcity suggests publication of my only record for this locality.

PIPING PLOVER. *Aegialitis meloda*. A single bird observed August 16, 1924; accompanied several other species on a mud flat; a Semipalmated Plover near it rendered identification doubly certain. Dawson remarks that this is a rare bird in the interior of Ohio.

In addition to the eight species above referred to, ten members of the *limicolae* occur at Englewood Dam more or less regularly as migrants and two species, the Killdeer and Spotted Sandpiper, breed quite regularly. Whatever may have been the effect on the land birds, the building of this dam certainly has had a salubrious effect on waterbird life.

DAYTON, OHIO.

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### EASTER BIRDS OF LITTLE EGYPT\*

BY ALVIN R. CAHN AND A. SIDNEY HYDE

The Easter vacation period of April 14 to 19, 1927, was spent by the writers on an automobile field trip from Champaign in the corn belt region of east central Illinois, southward to that part of the state known as "Little Egypt"—the southernmost portion of Illinois. The route lay through Dr. Ridgway's Bird Haven near Olney, and thence via Mt. Carmel, Carmi and Herrin to Alto Pass in northern Union County, the southern tip of Illinois, and a few miles east of the Mississippi River. The first night camp was made in the woods south of Mt. Carmel; the remaining four days and nights were spent at and about Alto Pass, the highest point in the state, and a portion of the glorious Ozark highlands.

Observations on birds were made at all times possible—from daylight to dark, daily. The list for the trip comprises 112 species, and it is believed that enough intensive field work was accomplished in Union County to warrant the publication of the results. The coun-

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\*Contribution from the Zoological Laboratory of the University of Illinois, No. 337.

try is so wild and there has been so little contributed to a knowledge of its fauna, that the writers feel that it is high time a beginning was made. Though the dates involved in the present investigation may seem a bit early for satisfactory bird study, yet it is only in the case of some of the summer residents which arrive late in the season that it was impossible to ascertain something as to the abundance of these species during their breeding season.

An attempt was made to determine the ecological position which the birds occupy in the various associations represented in this region. In pursuance of this idea, four distinct associations are recognized, and a description of each association precedes the list of birds which characterize or breed in it. The names of species in each list are arranged in the order of decreasing abundance, in accordance with the ever more prevalent recognition among field naturalists of the importance of the ecological relations of organisms. Following this ecological discussion, a list of all species seen is given in approved A. O. U. order.

#### ASSOCIATION I. UPLAND OAK-HICKORY FOREST

This is by far the most important and extensive association included in the area studied, and comprises the wonderful old forests which so beautifully clothe all of the Illinois Ozarks, excepting only small cleared areas. It constitutes about 90 per cent of the area investigated. It is a region of steep, rolling hills, with numerous local outcrops of great masses of rock bearing beautiful fossils of *Lepidodendron*, and with streams numerous and full. The trees are of reasonable size, the full grown forest trees averaging sixty feet in height, one foot in diameter at breast height, and running about 2,700 board feet per acre.

The principal trees are as follows. Among the oaks, seven species are found: black (*Quercus velutina*), Spanish (*Q. falcata*), red (*Q. rubra*), white (*Q. alba*), post (*Q. stellata*), scarlet (*Q. coccinea*), and blackjack (*Q. marilandica*). Three species of hickory: pignut (*Carya glabra*), mockernut (*C. alba*), and shagbark (*C. ovata*). The beech (*Fagus grandifolia caroliniana*) constitutes from 14 to 40 per cent of the forests, varying with the locality, and occupies ravines and north-facing slopes. Other characteristic trees are: butternut (*Juglans cinerea*), walnut (*Juglans nigra*), elm (*Ulmus americanus*), mulberry (*Morus rubra*), cucumber (*Magnolia acuminata*), tulip (*Liriodendron tulipifera*), red gum (*Liquidambar styracifolia*), black cherry (*Prunus serotina*), coffee tree (*Gymnocladus dioica*), sugar maple (*Acer saccharum*), silver maple (*Acer saccharinum*), black



Nesting site of the Carolina Wren. Union County, Ill. The nest is at the base of the oak tree, in the righthand corner. Photograph by Dr. H. L. Schantz.



Nest and Eggs of the Carolina Wren. The nest contained three eggs well along in incubation. Photograph by Dr. H. L. Schantz.

gum (*Nyssa sylvatica*), dogwood (*Cornus florida*), American hornbeam (*Ostrya virginiana*) and sassafras (*Sassafras variifolium*). The woods have but little shrubby undergrowth, and the herbage consists of such typical woods flowers as the violet and may-apple.

The birds of the Oak-Hickory Association may be grouped as follows:

*Abundant Species*

Breeders and Residents: Tufted Titmouse, Carolina Wren, Whip-poor-will, Cardinal, Carolina Chickadee, Red-headed Woodpecker, Mourning Dove, Towhee.

Migrants: Parula Warbler, Goldfinch. Some individuals breed here, probably.

*Common Species*

Breeders and Residents: Red-bellied Woodpecker, Blue Jay, Downy Woodpecker, Cowbird, Turkey Vulture, Crow, Bob-white, Summer Tanager, Scarlet Tanager.

Migrants: Myrtle Warbler, Palm Warbler, Least Flycatcher, White-throated Sparrow.

*Uncommon Species*

Breeders and Residents: Crested Flycatcher, Wood Thrush, Red-eyed Vireo, Yellow-throated Vireo, Wood Pewee, Hairy Woodpecker, Pileated Woodpecker, White-breasted Nuthatch, Red-tailed Hawk, Barred Owl, Screech Owl, Cooper's Hawk.

Migrants: Cedar Waxwing, Hermit Thrush, White-crowned Sparrow, Junco (very late for the species), Song Sparrow, Rose-breasted Grosbeak, Black-throated Blue Warbler, Black-throated Green Warbler, Blackburnian Warbler, Brown Creeper, Magnolia Warbler, Black and White Warbler.

IA. BUSHY CLEARINGS IN OAK-HICKORY ASSOCIATION

Scattered throughout the forest are bushy clearings covered with a thick growth of blackberry, raspberry and young sassafras. Most of the areas are on hillsides, though one rather extensive and important one was found in a stream valley. These areas were found to have certain very distinctive birds, found nowhere else:

White-eyed Vireo, Prairie Warbler, Blue-winged Warbler, Yellow-breasted Chat. The Cardinal, Brown Thrasher, Catbird and Towhee occur here also, but are less exclusive or selective.

ASSOCIATION II. CYPRESS SWAMP

Typical swamp woods near large streams. From one inch to three feet of water over much of the forest floor. The trees tend to be large,

and there is a rather luxuriant undergrowth and herbage where not drowned out. The dominant trees are: bald cypress (*Taxodium distichum*), swamp white oak (*Quercus bicolor*), tupelo (*Nyssa sylvatica*), sweet gum (*Liquidambar styraciflua*), sycamore (*Platanus occidentalis*), beech (*Fagus grandifolia*), sugar maple (*Acer saccharum*) and elm (*Ulmus americanus*). The predominant ground-cover species are: poison ivy (*Rhus toxicodendron*), buttercup (*Ranunculus* sp.), *Trillium* spp., blue phlox (*Phlox divaricata*) jewelweed (*Impatiens* sp.) seedlings, and many varieties of ferns.

Breeding Birds: Tufted Titmouse, Carolina Wren, Blue-gray Gnatcatcher, Red-headed Woodpecker, Blue Jay, Crested Flycatcher, Prothonotary Warbler, Red-eyed Vireo, Parula Warbler, Wood Thrush, Yellow-throated Vireo, Red-shouldered Hawk, Green Heron, Cardinal, Orchard Oriole, Broad-winged Hawk.

The Magnolia Warbler and Field Sparrow were found about the edge of the dense swamp.

#### ASSOCIATION III. OPEN FIELDS

Pastures, hay fields, corn fields, and truck gardens all appeal to those species of birds which prefer open situations, and hence these have all been grouped together under a single heading.

Breeding Birds: Meadowlark, Prairie Horned Lark, Killdeer, Dickcissel, Grasshopper Sparrow, Vesper Sparrow, Marsh Hawk.

Migrant: Bobolink.

#### ASSOCIATION IV. AQUATIC

Included under this heading we have such areas as flooded fields and roadsides, as well as the streams and rivers proper. It will be remembered that the dates included in this visit mark the early stages of the greatest flood southern Illinois and states farther south have ever experienced. Corn fields were actually lakes, roads often rivers, and water was everywhere during our visit.

Breeding Species: Spotted Sandpiper, Green Heron, Pied-billed Grebe, Virginia Rail, Sora.

Migrants: Solitary Sandpiper, Scaup Duck, White-fronted Goose.

#### V. BIRDS OF GENERAL DISTRIBUTION OR OF LOCAL SITUATIONS

A number of species were so general in their distribution that it is found impossible to class them as belonging to any one or two associations:

Field Sparrow, Chipping Sparrow, Robin, Bluebird.

At the great cliffs bordering the Mississippi Bottoms the following species were noted, and are possibly breeders:

Turkey Vulture, Chimney Swift, Black Vulture, Mississippi Kite.

Other species, found in local situations too well known to need special mention in most cases, follow:

Maryland Yellowthroat, Migrant Shrike, Flicker, Phoebe, Purple Martin, Cedar Waxwing, Red-winged Blackbird, Mockingbird, House Wren, Bewick's Wren, Barn Swallow, Bank Swallow, Kingbird, Kingfisher, Rough-winged Swallow, Indigo Bunting, Sparrow Hawk, Baltimore Oriole, Ruby-throated Hummingbird.

A list of all of the species observed, in the order of the A. O. U. check-list, follows. The number after the name of each species refers to the association in which the bird was found. When more than one number appears, the first represents the association most important to the species in question. For reference, the numbers representing the associations are repeated:

- I. Upland Oak-Hickory.
  - Ia. Bushy Clearings in Oak-Hickory.
- II. Cypress Swamp.
- III. Open Fields.
- IV. Aquatic.
- V. General or Local Situations: Miscellaneous.

Podilymbus podiceps	Pied-billed Grebe .....	4
Marila affinis	Scaup Duck .....	4
Anser albifrons gambeli	White-fronted Goose .....	4
Ardea herodias herodias	Great Blue Heron.....	4
Butorides virescens virescens	Green Heron .....	2, 4
Rallus virginianus	Virginia Rail .....	4
Porzana carolina	Sora .....	4
Actitis macularia	Spotted Sandpiper .....	4
Tringa solitaria solitaria	Solitary Sandpiper .....	4
Batramia longicauda	Upland Plover .....	3
Oxyechus vociferus	Killdeer .....	3
Colinus virginianus virginianus	Quail .....	1
Zenaidura macroura carolinensis	Mourning Dove .....	1, 5
Cathartes aura septentrionalis	Turkey Vulture .....	1, 5
Coragyps urubu	Black Vulture .....	5
Ictinia mississippiensis	Mississippi Kite .....	5
Circus hudsonius	Marsh Hawk .....	3
Accipiter cooperi	Cooper's Hawk .....	1
Buteo borealis borealis	Red-tailed Hawk .....	1
Buteo lineatus lineatus	Red-shouldered Hawk .....	2, 1
Buteo platypterus	Broad-winged Hawk .....	2, 1
Cerchneis sparveria sparveria	Sparrow Hawk .....	5
Strix varia varia	Barred Owl .....	1
Otus asio asio	Screech Owl .....	1
Ceryle alcyon alcyon	Kingfisher .....	5

<i>Dryobates villosus villosus</i>	Hairy Woodpecker .....	1
<i>Dryobates pubescens medianus</i>	Downy Woodpecker .....	1
<i>Sphyrapicus varius varius</i>	Yellow-bellied Sapsucker .....	1
<i>Phloeotomus pileatus abieticola</i>	Pileated Woodpecker .....	1
<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker .....	1
<i>Colaptes auratus luteus</i>	Northern Flicker .....	1, 5
<i>Antrostomus vociferus vociferus</i>	Whip-poor-will .....	1
<i>Chaetura pelagica</i>	Chimney Swift .....	5
<i>Archilocus colubris</i>	Ruby-throated Hummingbird .....	5
<i>Tyrannus tyrannus</i>	Kingbird .....	5
<i>Myiarchus crinitus</i>	Crested Flycatcher .....	1
<i>Sayornis phoebe</i>	Phoebe .....	5
<i>Myiochanes virens</i>	Wood Pewee .....	1
<i>Empidonax minimus</i>	Least Flycatcher .....	1
<i>Otocoris alpestris praticola</i>	Prairie Horned Lark.....	3
<i>Cyanocitta cristata cristata</i>	Blue Jay .....	1
<i>Corvus brachyrhynchos brachyrhynchos</i>	Crow .....	1, 3
<i>Dolichonyx oryzivorus</i>	Bobolink .....	3
<i>Molothrus ater ater</i>	Cowbird .....	3, 1
<i>Agelaius phoenicius arctolegus</i>	Red-winged Blackbird .....	5
<i>Sturnella magna magna</i>	Meadowlark .....	3
<i>Icterus spurius</i>	Orchard Oriole .....	2, 5
<i>Icterus galbula</i>	Baltimore Oriole .....	5
<i>Astragalinus tristis tristis</i>	Goldfinch .....	1
<i>Poocetes gramineus gramineus</i>	Vesper Sparrow .....	3
<i>Ammodramus savannarum</i>	Grasshopper Sparrow .....	3
<i>Zonotrichia leucophrys leocophrys</i>	White-crowned Sparrow .....	1
<i>Zonotrichia albicollis</i>	White-throated Sparrow .....	1
<i>Spizella passerina passerina</i>	Chipping Sparrow .....	5
<i>Spizella pusilla pusilla</i>	Field Sparrow .....	3, 1a
<i>Junco hyemalis hyemalis</i>	Junco .....	1
<i>Peucaea aestivalis aestivalis</i>	Bachman's Sparrow .....	3
<i>Melospiza melodia melodia</i>	Song Sparrow .....	1a, 5
<i>Melospiza georgiana</i>	Swamp Sparrow .....	5, 1a
<i>Pipilo erythrophthalmus erythrophthalmus</i>	Towhee .....	1
<i>Cardinalis cardinalis cardinalis</i>	Cardinal .....	1, 1a
<i>Hedymeles ludovicianus</i>	Rose-breasted Grosbeak .....	1
<i>Passerina cyanea</i>	Indigo Bunting .....	1, 2
<i>Spiza americana</i>	Dickcissel .....	5
<i>Piranga erythromelas</i>	Scarlet Tanager .....	1
<i>Piranga rubra rubra</i>	Summer Tanager .....	1
<i>Progne subis subis</i>	Purple Martin .....	5
<i>Hirundo erythrogaster</i>	Barn Swallow .....	5
<i>Iridoprocne bicolor</i>	Tree Swallow .....	5
<i>Riparia riparia</i>	Bank Swallow .....	5
<i>Stelgidopteryx serripennis</i>	Rough-winged Swallow .....	5
<i>Bombycilla cedrorum</i>	Cedar Waxwing .....	5
<i>Lanius ludovicianus migrans</i>	Migrant Shrike .....	3
<i>Vireosylva olivacea</i>	Red-eyed Vireo .....	1
<i>Vireosylva gilva gilva</i>	Warbling Vireo .....	5
<i>Lanivireo flavifrons</i>	Yellow-throated Vireo .....	1

<i>Vireo griseus griseus</i>	White-eyed Vireo .....	1a
<i>Mniotilta varia</i>	Black and White Warbler.....	1
<i>Protonotaria citrea</i>	Prothonotary Warbler .....	2
<i>Vermivora pinus</i>	Blue-winged Warbler .....	1a, 1
<i>Compsothlypis americana usneae</i>	Northern Parula Warbler.....	1
<i>Dendroica aestiva aestiva</i>	Yellow Warbler .....	1, 1a
<i>Dendroica caerulescens caerulescens</i>	Black-throated Green Warbler.....	1
<i>Dendroica coronata</i>	Myrtle Warbler .....	1
<i>Dendroica magnolia</i>	Magnolia Warbler .....	1
<i>Dendroica fusca</i>	Blackburnian Warbler .....	1
<i>Dendroica virens</i>	Black-throated Green Warbler.....	1
<i>Dendroica palmarum</i>	Palm Warbler .....	1
<i>Dendroica discolor</i>	Prairie Warbler .....	1a
<i>Seirus noveboracensis noveboracensis</i>	Water-thrush .....	5
<i>Oporornis formosus</i>	Kentucky Warbler .....	1a
<i>Geothlypis trichas trichas</i>	Maryland Yellowthroat .....	5
<i>Icteria virens virens</i>	Yellow-breasted Chat .....	1a
<i>Setophaga ruticilla</i>	Redstart .....	1
<i>Mimus polyglottos polyglottos</i>	Mockingbird .....	5
<i>Toxostoma rufum</i>	Brown Thrasher .....	5
<i>Dumetella carolinensis</i>	Catbird .....	1a, 1
<i>Thryothorus ludovicianus ludovicianus</i>	Carolina Wren .....	1
<i>Thryomanes bewicki bewicki</i>	Bewick's Wren .....	5
<i>Troglodytes aedon aedon</i>	House Wren .....	5
<i>Certhia familiaris americana</i>	Brown Creeper .....	1
<i>Sitta carolinensis carolinensis</i>	White-breasted Nuthatch .....	1
<i>Parus bicolor</i>	Tufted Titmouse .....	1
<i>Penthestes carolinensis carolinensis</i>	Carolina Chickadee .....	1
<i>Regulus satrapa satrapa</i>	Golden-crowned Kinglet .....	1
<i>Regulus calendula calendula</i>	Ruby-crowned Kinglet .....	1
<i>Polioptila caerulea caerulea</i>	Blue-gray Gnatcatcher .....	1
<i>Hylocichla mustelina</i>	Wood Thrush .....	1
<i>Hylocichla guttata pallasi</i>	Hermit Thrush .....	1
<i>Planesticus migratorius migratorius</i>	Robin .....	1a, 5
<i>Sialia sialis sialis</i>	Bluebird .....	5

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