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EFFECTS OF ENDOPARASITES AND HEMATOPHAGOUS ECTOPARASITES ON REPRODUCTIVE SUCCESS OF EASTERN BLUEBIRDS (SIALIA SIALIS)

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Parasites may have an impact on the health, behavior, and reproductive success of wild birds (reviewed by Møller et al. 1990). Although some studies provide strong evidence supportive of this hypothesis (Brown and Brown 1986, Hudson et al. 1998), others provide equally convincing data demonstrating no impact of parasitism (Bennett et al. 1988, 1993; Johnson and Albrecht 1993). Blanket statements concerning negative effects of parasites on birds may be unwarranted, and the impact of particular parasite/host interactions should be examined on a case by case basis.

Eastern Bluebirds (Sialia sialis) can be infected with a variety of blood parasites (Bennett et al. 1982), and bluebird nests are frequently infested with hematophagous ectoparasites (Hicks 1959, Pinkowski 1977, Burtt et al. 1991). The effect of blood parasites on the Eastern Bluebird is unknown and, though previously studied, the impact of hematophagous ectoparasites on the bluebird is unclear (Pinkowski 1977, Roby et al. 1992, Whitmann and Beason 1992). The objective of this study was to address these issues by (1) surveying the blood parasites and hematophagous ectoparasites associated with Eastern Bluebirds from southeast Georgia and by (2) assessing the impact of parasitic organisms on measures of bluebird reproductive success.

Methods

We monitored a total of 113 bluebird nestboxes in Bulloch and

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Chatham counties in southeast Georgia. The Bulloch County site consisted of 48 boxes located on the Southern Links Golf Club near Statesboro. These boxes were checked at least once per week from March-August 1997. In Chatham County, we monitored 65 boxes in the vicinity of Savannah. These boxes included established bluebird trails along Little Neck Road, on the grounds of the Bethesda Home for Boys, and at the Skidaway Oceanographic Institute on Skidaway Island. Chatham County boxes were checked every 7-10 days from April-September 1997. Boxes were placed, usually near the margins of wooded areas, at a height of 1.5-2.0 m on trees or poles that were separated by at least 50 m. We removed old nests unless the box was already occupied. For each nest we recorded the date nesting began, clutch size, brood size, and number of fledglings. Initially, the body mass and right tarsus length were measured on all nestlings 12-15 days old. In June, the protocol was changed, and these measurements were made on half of the nestlings. If there were five nestlings, three were measured.

Adult bluebirds (18 females, 1 male) were captured in nestboxes while brooding or while taking food to the nestlings and bled by pricking the brachial vein with a sterile 27 G needle. We collected blood (≤ 50 µl) in a microhematocrit capillary tube and then stopped the bleeding prior to releasing the bird by applying gentle pressure to the puncture with a sterile cotton pad. Immediately after collection, blood was smeared onto microscope slides and, in the laboratory, these slides were fixed in 100% methanol, stained with Wright and Giemsa stain (Sigma Chemical Co., St. Louis, Missouri), and examined with a brightfield microscope for the presence of blood parasites.

Nests were removed from nestboxes within 1 week of fledging, placed in a resealable plastic freezer bags, and transported back to the laboratory at Georgia Southern University. A damp paper towel was placed in the bag, which was then refrigerated for no more than 10 days until ectoparasites could be collected. We used a Berlese funnel suspended over a jar of 70% ethanol to collect ectoparasites. Hematophagous arthropods were identified and counted.

Statistical analyses were performed using JMP (SAS Institute, 1994, Cary, North Carolina). We used nonparametric statistics when raw data or transformed data failed to meet the assumptions of parametric tests. Subsequent nestings in the same box were treated independently. Mean values are reported ± 1 standard error.

Results

There were three nesting cycles during this study. The first began in mid-March and the third ended in early September. A total of 113 nestboxes was monitored, and bluebirds built a total of 81 nests in 54 (48%) of these boxes. Nestlings fledged from 64 (79%) of the nests. Successful nests (those that produced fledglings) occurred in 45 (80%) of the active boxes and yielded an average of 4.7 \pm 0.3 eggs, 3.8 ± 0.2 nestlings, and 3.6 ± 0.2 fledglings per nest. Unsuccessful nests were destroyed by fire ants (Solenopsis invicta), attacked by predators, abandoned for unknown reasons, or contained infertile eggs. The mean mass of 12–15 day old nestlings was 28.5 ± 0.3 g. and the mean tarsus length was 16.6 ± 0.1 mm (n = 113 nestlings). There was no difference between counties in the number of eggs laid per nest, the number of eggs hatched, or the number of chicks fledged.

Hematophagous ectoparasites were quantified in 45 successful nests. One tick, an Amblyomma americanum nymph, was found in 1 (2%) of the nests, and *Dermanyssus prognephilus* mites were found in 44 (98%) of the nests. No other hematophagous arthropods were found. The mean number of D. prognephilus mites per nest was 186.0 ± 54.4 (range = 0-2286 mites). Locality had no effect on the prevalence of D. prognephilus, but the mean number of D. prognephilus per nest in Chatham County (252.6 ± 80.4) was greater (Wilcoxon $\chi^2 = 11.3$, df = 1, P < 0.001) than the mean number per nest in Bulloch County (65.2 ± 32.3). There was no significant relationship between the number of D. prognephilus mites per nest and the number of bluebird eggs laid, the number and size of nestlings, or the number of fledglings when localities were analyzed separately or combined.

Ten of 19 (53%) adult bluebirds, four from Bulloch County and six from Chatham County, were infected with blood parasites. Protozoan parasites included Haemoproteus fallisi (eight birds infected; prevalence = 42%) and an undetermined species of Trypanosoma (two birds infected; prevalence = 10%). Three birds (16%) were infected with an undetermined species of microfilarial worm. One of the female birds was infected with both H. fallisi and microfilariae; another female was infected with all three genera of parasites. Nestlings of the H. fallisi-infected females were not significantly smaller in body mass nor did they have shorter tarsi than nestlings of uninfected females. There was no difference between H. fallisi-infected females and uninfected females with respect to the number of eggs laid, the number of nestlings, or the number of fledglings. Numbers of Trypanosoma-infected and microfilariaeinfected birds were too low to permit statistical analysis.

Discussion

The numbers of eggs, nestlings, and fledglings produced by Eastern Bluebirds in south Georgia are similar to those reported in

other regions (Scott et al. 1993, Pitts 1995, Radunzel and Muschitz

1997).

Nearly all of the bluebird nests we examined were infested with the hematophagous mite D. prognephilus. This mite is commonly found in nests of cavity-nesting birds, is known to feed on the blood of Eastern Bluebird nestlings (Moss et al. 1970). There is ample evidence that some hematophagous ectoparasites influence avian fitness traits such as time of breeding, number of clutches per season, and quantity and quality of offspring (Brown and Brown 1986, Richner et al. 1993; reviewed by Møller et al. 1990). However, we found no relationship between the number of D. prognephilus per nest and any measure of bluebird reproductive success. Consequently, D. prognephilus may not affect bluebird reproduction. Similarly, blowfly larvae (Protocalliphora sialia) are variously reported to have little or no effect on bluebird nestling development or survival even though they may consume as much as 50% of the nestlings' total blood volume each day (Roby et al. 1992, Whitman and Beason 1992). Neither blowfly larvae nor hematophagous mites (Androlaelaps casalis and Dermanyssus hirundinis) affect the survival, health, or growth of nestling House Wrens (Troglodytes aedon) (Johnson and Albrecht 1993, Paceika et al. 1998), despite the consumption of an estimated 10-30 g of blood per brood (Johnson and Albrecht 1993). Finally, the intensity of the northern fowl mite (Ornithonyssus sylviarum) does not appear to affect the clutch size or number of nestlings in Penduline Tits (Remiz pendulinus) (Darlova et al. 1997).

These results indicate that nest parasites may not pose a significant threat, at least to certain bird species. This is indirectly supported by the fact that both the Eastern Bluebird and the House Wren prefer boxes containing old nests (Thompson and Neill 1991, Kalisz and Wells 1994), despite the prediction that old nests are more likely to be infested with high numbers of hematophagous ectoparasites (Møller et al. 1990). Alternatively, host parents may mask the effects of hematophagous ectoparasites by increasing energy expenditures for

food gathering (Johnson and Albrecht 1993).

Haemoproteus fallisi was the most common blood parasite of adult birds examined during this study. This finding is consistent with the report that haemoproteids are the most common blood parasites of North American passerines (Greiner et al. 1975). Though historically considered to have little impact on birds (Bennett et al. 1988, 1993), there is evidence that Haemoproteus infection can result in myopathy and mortality, particularly in young, non-immune birds (Atkinson and van Riper 1991, Earle et al. 1993). We found no evidence that Haemoproteus fallisi infection of adult bluebirds had an effect on their reproduction or the development of their nestlings.

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RE-EVALUATION OF THE AVIAN BREEDING RECORDS OF J. E. GOULD

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Johnston (1989, 1991a, 1991b) published several papers based on his evaluation of egg set data and other breeding information collected in Georgia, Florida, and Virginia by the oologist J. E. Gould in the late 1800s and early 1900s. Some breeding information for a number of species include first state or extralimital breeding records. Johnston, however, based his conclusions about the validity of these reports on unpublished information in a hand-written ledger. Johnston did not examine the collection itself. Using this collection and other information, we re-evaluate Gould's records. Where pertinent to our evaluation of Florida, Georgia, and Virginia material, we also examine and evaluate the validity of egg sets of more than ordinary importance collected by Gould in other states, in relation to the work of other oologists or ornithologists of the period.

Methods

A. O. English, a friend of Gould's, donated the Gould Collection to the Charleston Museum (ChM) in 1984 (see Johnston 1989, 1991a, 1991b, and references cited therein for personal information on the Gould family and the Gould Collection). Unfortunately, the collection itself had not been properly curated (most sets were unnumbered, and had no accompanying egg slips). For those eggs that were numbered, there were no unique numbers on them, which is usually the case for old collections. Where possible, we matched this information with Gould's ledger entries from a photocopy of his original log. The accession numbers listed below are those of the Charleston Museum. The total of numbered egg sets which we matched up with Gould's catalog is 354, less than the total of 588 catalog entries, most of which Gould collected personally (Johnston 1989, 1991a, 1991b; but see

Post and McNair 1995). The location of Gould's numbered egg sets not at the Charleston Museum is unknown. It is possible that Gould traded these egg sets for others, although these are not listed in any catalog. Gould also obtained egg sets from other oologists (contra Johnston 1989, 1991a, 1991b), but like most of Gould's own eggs, these have no accompanying data, or in addition, are not listed in Gould's ledger.

Results

Georgia and Florida. — In coastal Georgia, Gould misidentified his three rarest egg sets (Caspian Tern, Black-billed Cuckoo, Bank Swallow) (McNair 1994, 1995; McNair and Post 1994). These errors are similar to those made by S. W. Wilson from the same region (primarily St. Simons Island). Gould probably relied on the earlier work of Wilson (Bailey 1883; see also McNair 1986, 1995; McNair and Post 1994). The purported Caspian Tern egg was re-identified as an egg of the Royal Tern, the earliest verified breeding record in Georgia (McNair 1994).

In the region around Arcadia, Desoto County, Florida, Gould had unsubstantiated sight observations of an old Northern Harrier nest and a pair of territorial Louisiana Waterthrushes (Gould 1933, Johnston 1991a). He also had another unconfirmed sight observation of a pair of territorial Louisiana Waterthrushes 100 km away, in Polk County, Florida. We could not verify an egg set of Chimney Swift that Gould collected in a chimney of his residence in Arcadia (McNair and Post 1999). We believe this breeding information is doubtful. We also discuss elsewhere the validity of Gould's egg set data for some

additional species in Florida (McNair and Post 1999).

Gould also collected egg sets of locally scarce or regional species of more than ordinary importance in Georgia and Florida (see Johnston 1989, 1991a). These species are within their normal breeding range. The following egg sets have been verified: Georgia: Cooper's Hawk (Accipiter cooperii) (ChM 91:13.008a-e); Florida: Wood Stork (Mycteria americana) (ChM 91.13.28, 91.13.71), Burrowing Owl (Athene cunicularia) (ChM 91.13.100-103), and Gray Kingbird (Tyrannus dominicensis) (ChM 91.13.14-15). We could not verify the egg sets for Florida Scrub-Jay (Aphelocoma coerulescens) and Black-whiskered Vireo (Vireo altiloquus). Gould's greatest annual periods of activity in Georgia and Florida were in 1897 and 1916, when he collected 23 and 20 egg sets, respectively.

Virginia. — Gould did his most significant work in Virginia. Although he collected only 20 egg sets there, these included verified clutches of several rare and local species, at least as they were known at the time (see Murray 1952, Johnston 1991b). These include an egg

set (ChM 1991.13.002) of a Magnolia Warbler (Dendroica magnolia) in the Mountain Lake area in 1915. Gould arrived at Mountain Lake after H. H. Bailey (Johnston 1991b). Bailey had previously found Magnolia Warblers on breeding territories there, but had not collected an egg set. H. B. Bailey, the father of H. H. Bailey, confirmed breeding Blue-headed Vireos (V. solitarius) at Mountain Lake in 1913, for the first nest record in Virginia, two years before Gould collected an egg set of this species at the same locality (ChM 1991.13.012). Gould's association with H. H. Bailey can be traced back as far as 1906 in southeastern Virginia (Johnston 1991b), where Gould discovered egg sets of the Whip-poor-will (Caprimulgus vociferus) in 1908 (ChM 1991.13.010) and the Henslow's Sparrow (Ammodramus henslowii) in 1913 (ChM 1991.13.004; Johnston 1991b). Another friend of Bailey's, A. H. Helme, originally found the breeding site for the Henslow's Sparrow in 1909 (Bailey 1913). Bailey (1913) himself found breeding sites for the Whip-poor-will in the Tidewater region, although it is unknown if this included Cape Henry, where Gould collected his egg set.

North Carolina. — Gould collected an egg set of the Swainson's Warbler (Limnothlypis swainsonii) at Edenton, Chowan County, in 1906 for the first verified nest record in the state (Johnston 1991b;

McNair and Post 1995).

Tennessee. — Gould collected an egg set (ChM 1991.13.311) of the Black-billed Cuckoo from an oak at Cave Spring, Claiborne County, 12 May 1901. The original clutch contained two eggs, but one egg is missing. The Black-billed Cuckoo is a rare summer resident in Tennessee (Nicholson 1997), and Claiborne County represents a new confirmed location for the state. We believe Gould collected this egg set, because it is consistent with the timing and locations of two other egg sets (both verified, ChM) Gould collected in eastern Tennessee in 1901.

Ohio. — Gould collected four egg sets (ChM 91.13.251-254) of Bewick's Wren (*Thryomanes bewickii*) from 1891-1894, in Jersey and Fraziersburg. The nests were placed in old barns and a house. Breeding populations of Bewick's Wren in Ohio have collapsed

subsequently (Peterjohn 1989).

Indiana. — Gould concentrated his collecting at Lake Bradford, Starke County, a prime location for marsh-breeding birds (Butler 1898, Mumford and Keller 1984). Gould's discovery of an active Northern Harrier's nest (clutch of 5; ChM 91.13.7) in 1893 was one of the first for the state, although harriers had been confirmed breeding at Lake Bradford earlier.

Kansas. — Gould listed in his ledger that he collected an egg of the Passenger Pigeon (*Ectopistes migratorius*) on 2 July 1889 in Franklin County. This egg has been verified, but Gould probably

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obtained it from another individual (Post and McNair 1995), and the circumstances surrounding the collection of this egg is not of unquestionable provenance.

Discussion

Gould was a member of the American Ornithologists' Union for over 50 years (Johnston 1989, 1991b), and although he published little, he must have kept pace with some developments in oology and other aspects of field ornithology through the literature (although see Gould 1933 for his remark on his ignorance of Florida data), by some field association with H. H. Bailey, and limited communication with a few other individuals. Gould collected most of his egg sets near his home (Johnston 1989, 1991a, 1991b), but his job with the railroad allowed him to collect in other areas.

We believe Johnston's (1989, 1991a, 1991b) regard for Gould as an oologist was based on his evaluation of Gould's rarer Virginia material. Although Gould's Virginia records are valid (Johnston 1991b), his rarer Georgia records are not and Florida records are highly doubtful. In Virginia, Gould had H. H. Bailey as an occasional mentor; in these other two states he had no one. Gould collected many of his most significant egg sets after other individuals found egg sets or breeding pairs on territory at or near these same localities, or where Gould was probably guided by the literature at these sites (e.g., St. Simons Island, Georgia; Bailey 1883).

Gould was nevertheless a talented egg collector. His list of egg sets collected in Georgia and Florida generally contain useful and reliable information, although of minor historical importance (Johnston 1989, 1991a). He also collected several other egg sets in other states outside Virginia of more than ordinary importance (e.g., Swainson's Warbler in North Carolina and Black-billed Cuckoo in Tennessee).

Gould published his purported extralimital breeding records from Georgia and Florida for only one species (for which he had no verifiable documentation: the Louisiana Waterthrush, 18 years after the fact (Gould 1933; McNair and Post 1999). Otherwise, Gould, unlike some other "railroad" oologists such as E. Arnold (Houston and Bechard 1982), failed to document his discoveries properly. While some of these extralimital records, either suspect or erroneous, were perhaps considered by Gould to be merely locally rare breeders based on current perception by some oologists or ornithologists at the time (e.g., Black-billed Cuckoo, Bank Swallow; McNair and Post 1994, McNair 1995), others were not (e.g., Northern Harrier, Caspian Tern, Passenger Pigeon, and Chimney Swift; McNair 1994, Post and McNair 1995, McNair and Post 1999).

Gould bequeathed his egg collection to an amateur birdwatching friend and fellow railroad man, A. O. English, rather than directly to an institution for proper care and scientific use. This may be a reflection of Gould's amateurish approach to egg-collecting. Johnston (1991b) quotes Gould as stating that he "collected only for himself." Although Gould did obtain egg sets from other individuals (ChM), and probably traded or sold some of his own, his general approach to his hobby reveals an attitude that Gould was reluctant to share information. We speculate Gould may have been reluctant to publicize his knowledge because he could not withstand criticism, as with many amateurs (cf. Houston and Bechard 1982).

Finally, we caution against uncritical acceptance of unsubstantiated historical records unless new confirmatory information is presented. In fact, most species nest records of Gould in Florida and Georgia (e.g., Bank Swallow) had been questioned and rejected by regional experts during the period Gould was active (Wayne 1908, 1910; Erichsen 1910). Healthy scientific skepticism should underlie analyses of records in field ornithology.

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GENERAL NOTES

EARLY SIGHTINGS OF MISSISSIPPI KITES IN SOUTH GEORGIA — Haney et al. (1986, Annotated Checklist of Georgia Birds, GOS Occasional Publ. No. 10) list the Mississippi Kite (Ictinia mississippiensis) as uncommon to locally common along the coastal plain between late April and early October, although there is a record near Atlanta as late as 2 December 1974.

The purpose of this note is to report two sightings of Mississippi Kites in early February. The first sighting was 2 February 1991, when my wife and I observed an adult flying over downtown Statesboro, Bulloch County, Georgia. This bird was approximately 40 m overhead and landed in a nearby tree. The second sighting was 5 February 1998, when I observed another adult just outside Statesboro. The second bird was observed with 10X binoculars as it flew 50 m overhead. Both kites were seen in the late afternoon, just before sunset. The pale head, gray body (about 30 cm in length), dark primaries, and long dark tail were visible on both occasions. The

white color of the secondaries was evident as well.

It is not known whether these rare early sightings were of kites that had stayed in North America for the winter (Mississippi Kites have been observed on at least seven occasions during the winter in recent years in Florida; Stevenson and Anderson, 1994, The birdlife of Florida). It seems unlikely they were early migrants from their wintering grounds in South America, because they typically remain on the wintering grounds into March (del Hoyo et al., eds., 1994, Handbook of birds of the world).

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SPRING RECORD OF HORNED GREBES IN LAURENS COUNTY — In the mid-afternoon of 5 May 1998, I discovered a pair of Horned Grebes (Podiceps auritus) on Avocet Pond in Jackson's pasture in northeast Laurens County. According to Haney et al. (1986, Annotated checklist of Georgia birds, GOS Occasional Publ. No. 10), this species is a rare transient in the interior in spring migration.

The two birds were feeding near the bank as I approached in my vehicle to within about 25 m. The day was clear, and the sun was almost directly overhead as I observed the grebes with binoculars and spotting scope. The birds continued to feed for several minutes as I watched, although they drifted farther away. One of the birds was in its white and gray contrasting basic (winter) plumage; the other had completed its transition to alternate (breeding) plumage. The latter was colorful with its chestnut neck, breast, and flanks, and with its large golden ear tufts.

The birds remained on the pond through 12 May. I attempted to take photographs, but after the first day the two birds were never closer than about 100 m. The only other spring record for the Horned Grebe in Laurens County was that of a single bird in a marsh on 27 March 1983.

Thomas K. Patterson, 1409 Edgewood Drive, Dublin, Georgia 31021

SPRING SIGHTINGS OF WESTERN KINGBIRDS IN GEORGIA — On 12 April 1998, I was surveying a block for the Georgia Breeding Bird Atlas in Carroll County, Georgia. As I was traveling along Mitchell Road, a side road off Georgia Highway 100 about 8 km south of Bowdon and close to the Alabama state line, I noticed a bird about the size of an Eastern Kingbird (Tyrannus tyrannus) perched on a fence. I watched the bird from 15 m with 8X binoculars and noted that this kingbird's belly and flanks were a vivid lemon-vellow color, whereas the upper breast, throat, and head were pale gray. There was a dark transocular line running back onto the auriculars. The bill was all black and similar in size to that of the Eastern Kingbird. The dark wings contrasted noticeably with the back and showed no obvious edges to the coverts or flight feathers. The bird then flew up in my direction and hovered as if to catch an insect. From below, I could see much white in the spread tail. The bird then flew in the opposite direction across an open field and out of sight.

I suspected I had seen a Western Kingbird (T. verticalis), and confirmed this by consulting Field guide to the birds of North America (1987, 2nd edition, National Geographic Society). Several field marks would eliminate Couch's Kingbird (T. couchii), most noticeably the white in the tail. This mark also eliminates the less probable Tropical (T. melancholicus) and Cassin's Kingbirds. The bill size and overall coloration also strongly suggest a Western Kingbird.

On 24 May 1998, I was again doing work for the Georgia Breeding Bird Atlas, this time on Ossabaw Island in Chatham County. Larry Ross and I spotted another Western Kingbird on a fence beside an overgrown pasture. The kingbird was seen by several other observers a short time later.

Haney et al. (1986, Annotated checklist of Georgia birds, GOS

Occasional Publ. No. 10) list the Western Kingbird as a rare winter visitor throughout the state, more regular on the coast (extreme dates 13 September 1965 – 9 May 1967). The species is accidental in summer in Washington County (28 June 1982). Other than one seen on the Bainbridge Christmas Count on 27 December 1994, the only reports of Western Kingbirds in recent years have been from the coast during fall and winter.

Michael K. Bell, 607 Lawson Street, Bremen, Georgia 30110

WINTERING RUFOUS · HUMMINGBIRD RETURNS TO RICHMOND COUNTY — We (E. K. Urban and L. L. Urban, 1994, Oriole 59:19) reported that a female Rufous Hummingbird (Selasphorus rufus) wintered in the general vicinity of our house in Richmond County, Georgia, from 3 January—6 February 1994. This bird was captured and banded by Robert and Martha Sargent on 20 January 1994.

We again saw a female Rufous Hummingbirds in our garden on 20 September 1994 and 21–22 October 1994, and at our feeder on 10–13 November 1994. Then every day from 22 December 1994–6 April 1995, we observed a female Rufous Hummingbird in our garden and at our feeder. On 15 January 1995, and numerous times thereafter, until the bird left in April, we were able to see a band on its right leg. Although we did not capture this bird, it seems likely that it was the same banded bird that spent the previous winter (January–February 1994) at our home.

The only published record of a recaptured Rufous Hummingbird in Georgia is that of a male captured in Fayetteville, Fayette County, on 29 January 1991, and then recaptured about 25 km away in Senioa, Coweta County, on 14 October 1992 (R. Sargent, pers. comm.; E. K. Urban, 1994, Oriole 59:81–84). Assuming the bird banded at our home in January 1994 was the same bird seen there again in the winter of 1994–1995, this record is the first in Georgia for a Rufous Hummingbird to return and winter at the same place in two subsequent winters. Furthermore, its last day in our garden (6 April 1995) is the latest published spring record for Georgia, the previous being 3 April 1994 (W. L. Neel et al., 1991, Oriole 56:38–40).

Emil K. Urban and Lois L. Urban, 3114 Trafalgar Drive, Augusta, Georgia 30909

SANDHILL CRANES ON SAPELO ISLAND, GEORGIA — On 16 September 1999, shortly after Hurricane Floyd passed the coast of Georgia, I noticed two unusual birds foraging in Bourbon Field on Sapelo Island, McIntosh County, Georgia. At first glimpse I thought it was strange for some type of heron or egret to be foraging in Bourbon Field, which is high ground dominated by *Bahia* and other grasses. Using my camera and 200-mm lens as a monocular, I recognized the red crown of the grayish birds and realized the two birds were Sandhill Cranes (*Grus canadensis*). I approached to within about 60 m and photographed the birds, but was unable to see any leg bands on either of the birds. The birds were aware of my presence and maintained the distance between us.

I left the birds and returned to the office of the Georgia Department of Natural Resources in Brunswick, where I notified Mike Harris of the non-game section. Mike believed this to be the first record of Sandhill Cranes on Sapelo Island. I also contacted Jeff Spratt of the Wildlife Conservation Society on St. Catherines Island, where a small group of Sandhill Cranes resides and discussed this observation with him. He reported that their Sandhill Cranes consistently remain on St. Catherines and all were banded. Based on my observation and the information I received, I believe these two Sandhill Cranes were wild birds.

John W Bowers, Georgia Wildlife Resources Division, One Conservation Way, Brunswick, Georgia 31520.

AMERICAN ROBINS HATCH FROM NORTHERN CARDINAL NEST — Terres (1980, Audubon encyclopedia of North American birds, Alfred A, Knopf) reports at least seven cases of bird species sharing the same nest. However, in only two of these cases did the different species use the same nest simultaneously. Therefore, the objective of this paper is to report an American Robin (Turdus migratorius) and a Northern Cardinal (Cardinalis cardinalis) sharing the same nest in Macon, Georgia.

The nest was located in a 2-m tall shrub between a house and driveway on Marlis Circle in south Macon. The site is urban and less than 1 km from one of Macon's largest commercial malls. The nest itself appeared to be that of a Northern Cardinal. There was no mud or any lining in the loosely constructed twigs that made up the nest.

The owners of the property reported only eggs in the nest on 24 April 1998. On the morning of 25 April the nest contained two cardinal eggs, two robin eggs, and a 1-day-old robin nestling. When I first arrived just before noon, I saw a female cardinal carrying a small

green caterpillar at the nest; a female robin was sitting on the nest. The robin left the nest after about 10 min, and the female cardinal fed a nestling. Approximately 2 min later, the robin returned to the nest and continued brooding while the cardinal sat on the nest beside her. About 1 h later, while the robin was away from the nest, the female cardinal moved onto the nest to brood. When the female robin returned, she settled onto the back of the cardinal as if she were brooding.

On 26 April the nest contained a second robin nestling, approximately half the size of the chick hatched the previous day. That afternoon the female cardinal tried to feed the nestlings, but the female robin would not provide access to the nest. Within a couple of minutes, the male robin appeared and the female robin left the nest. The cardinal then fed the nestlings. The male robin left without any brooding activity and the female robin returned about 1 min later.

The female robin and female cardinal continued to share nesting duties and feeding. Only two robins hatched, and the remaining eggs (two cardinal, one robin) were eventually discarded from the nest. Harrison (1980, *A field guide to the birds' nests of the eastern United States*, Houghton Mifflin) indicates that the male Northern Cardinal is not heavily involved in nesting duties, and that was certainly the case at this nest. The male robin was present more often, but the females still carried out the majority of parental care. There appeared to be subtle dominance by the female robin, but the female cardinal continued to feed nestlings and attempt nest cleaning until both chicks fledged.

On 7 May, one of the nestlings was missing from the nest and could not be found. Because the first chick hatched on 24 April, the disappearance probably indicated fledging (the nestling period is 12–13 days; H. H. Harrison, 1980, A field guide to the birds' nests of the eastern United States, Houghton Mifflin). In fact, the fledgling was found on 9 May in the yard of the home next door. It was capable of strong flight even though the rectrices were short. By 10 May, both robins had fledged. I saw the older of the two fledglings in a tree about two days later. The female cardinal was in the area, but she did not feed the fledgling. I saw the younger fledgling on 10 and 11 May, and the male robin now appeared to be the principal caregiver for this bird.

Interestingly, the female cardinal began building a new nest within 1 m of the back door of the adjacent house on 8 May. It is unclear what circumstances led to the sharing of the original nest by these two species.

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FROM THE FIELD MARCH-MAY 1999

This spring produced little in the way of exceptional rarities in the state. Perhaps the report that generated the most widespread excitement was the sighting of a pair of Red Crossbills in Bartow County. These birds were originally found by Kevin Danchisen and Deb Zaremba and were subsequently reported by a number of observers. This species regularly occurs just across the Georgia state line on a couple of fronts, but it has been a nemesis for many birders here. The Bartow County birds, seen in open pine woods, may well have been an offshoot of the birds in Cleburne County, Alabama, where a breeding population has been present since at least October, 1998.

Again, both Shiny Cowbirds and White-winged Doves were reported and, as expected, Eurasian Collared-Doves continue to show up in new localities, but totally unexpected were the reports of Ross's Geese at two locations during May! A record was set for Kennesaw Mountain on 24 April, when an amazing 30 species of warblers were recorded during the day.

Abbreviations used include: ACOGB - Annotated Checklist of Georgia Birds; ASWMA - Altamaha State Waterfowl Management Area, McIntosh Co.; CRNRA - Cochran Shoals Unit of the Chattahoochee River National Recreation Area, Cobb Co.; ELHLAF - E.L. Huie Land Application Facility, Clayton Co.; Kennesaw Mt. - Kennesaw Mountain National Battlefield Park, Cobb Co.; NWR - National Wildlife Refuge; SCSP - Sweetwater Creek State Park, Douglas Co.; WMA - Wildlife Management Area.

SPECIES ACCOUNTS

RED-THROATED LOON - Most unusual were the two seen flying by Kennesaw Mt. on 12 April (Giff Beaton et al.).

COMMON LOON - Chris Loudermilk had an excellent count of 104 at SCSP on 31 March. Other notable sightings were 17 flying over Kennesaw Mt. on 24 March (Kevin Danchisen et al.), and 40+ at Carter's Lake on 17 April (Bill Blakeslee et al.).

PIED-BILLED GREBE - Following a strong storm the night before, 81 turned up at Garden Lakes in the Rome area on 14 April (Marion Dobbs).

HORNED GREBE - A single bird at Garden Lakes in the Rome area on 4 March was unusual for that location (Marion Dobbs). Eight was a good count at the ELHLAF on 20–21 March (fide Jeff Sewell). A late bird, molting into alternate plumage, was seen at SCSP on 2 May (Aubrey Scott).

- EARED GREBE One was still at Buford Dam on Lake Lanier on 6 March (Rusty Trump), and a bird in alternate plumage was seen at Carter's Lake on 17 April (Bill Blakeslee et al.).
- BLACK-CAPPED PETREL A *Pterodroma* petrel, probably of this species, was seen on a pelagic trip out of Savannah on 30 May (Giff Beaton et al.).
- CORY'S SHEARWATER This species was also listed as a probable sighting on the same pelagic trip on 30 May (Giff Beaton et al.).
- AUDUBON'S SHEARWATER Three were tallied, again on the same pelagic trip on 30 May (Giff Beaton et al.).
- WILSON'S STORM-PETREL Observers on the pelagic trip on 30 May had excellent close-up views of several of this species, with 12 being the total recorded (Giff Beaton et al.).
- LEACH'S STORM-PETREL The pelagic trip on 30 May turned up four (Giff Beaton et al.).
- AMERICAN WHITE PELICAN Seven were still near the mouth of the St. Marys River on 10 April, though only one was seen on the Georgia side (Darrell Lee).
- AMERICAN BITTERN This species was well reported throughout the period. Single birds were seen along the Ocmulgee River in Monroe Co. on 20 March (Michael Bell, Aubrey Scott), in the Dublin area on 10 April (Tommy Patterson, Jeff Sewell et al.), at Floyd Marsh on 10 April (Marion Dobbs), along the Ocmulgee River in Bibb Co. on 14 April (Larry Ross), at the Arrowhead Public Fishing Area in Floyd Co. on 17 April (Stephen Stewart), in the Okefenokee NWR on 20 April (Cindy Thompson, Sheila Willis), at the ELHLAF on 29 April (Paul Raney), at Harris Neck NWR on 2 May (Giff Beaton, Jon Dunn), and at Richmond Hill WMA in Bryan Co. on 2 May (Giff Beaton, Jon Dunn).
- LEAST BITTERN Giff Beaton and Jon Dunn had a good count of eight at Richmond Hill WMA on 2 May. One was seen at the ASWMA on 21 May (Eric Beohm), and another single bird was seen at the Arrowhead Public Fishing Area in Floyd Co. on 20 May (Stephen Stewart), and again on 22 May (Michael Bell, Aubrey Scott).
- SNOWY EGRET A single bird at the ELHLAF on 22 May was quite early (Jeff Sewell).
- LITTLE BLUE HERON A pair of adults was seen at Lake Buchanan in Haralson Co. on 7 May, with at least one remaining through the end of the period. Another bird was reported in Coweta Co. on 20 March (fide Jeff Sewell), and Susanna Rinard found an adult in Paulding Co. on 27 May. This species is usually only found in the Piedmont as a post-nesting wanderer in summer.
- CATTLE EGRET Single birds were seen near Ellijay on 18 April (Dennie McClure, Pam McClure), and at the CRNRA on 24 and 25 April (fide Jeff Sewell).
- BLACK-CROWNED NIGHT-HERON A first-year bird was a good find at Twin Lakes in Forsyth Co. on 12 April (Jim Flynn). This species is rarely reported in the Atlanta area, but one was heard on a pre-dawn thrush count at Kennesaw Mt. on 24 April (Bob Zaremba et al.).
- YELLOW-CROWNED NIGHT-HERON One was reported from the CRNRA on 10 April (fide Jeff Sewell), one was seen in Dooly Co. on 18 May (Dan Guynn), Eric Beohm counted 26 at Youman's Pond (Liberty Co.) on 21

May, and one adult was seen in Wilkinson Co. on 29 May (Ken Clark, Ty Ivey, Paul Johnson).

GLOSSY IBIS - Two were seen at Little Ocmulgee State Park in Wheeler Co. on 2 May (Jim Flynn, Earl Horn, Rusty Trump). This is quite far inland for this species.

WOOD STORK - A colony containing 200-300 nests was discovered during April in Emanuel/Jenkins Cos. (Bob Humphries).

GREATER WHITE-FRONTED GOOSE - One was seen at ELHLAF on 27 March (Carol Lambert), and again at the same location, a late bird was seen on 1 May (Michael Beohm). A bird that wintered in Laurens Co. was last reported on 10 April (Tommy Patterson et al.).

SNOW GOOSE - Two blue-phase birds were seen at ELHLAF on the late date of 1 May (Michael Beohm).

ROSS'S GOOSE - Following a phenomenal winter for this species, several birds were sighted this spring. The two birds first reported during February in Madison Co. remained throughout the period (many observers). Jerry and Marie Amerson also reported single birds in Walker Co. and Houston Co. during March, and one in Wheeler Co. on 16 May.

GADWALL - A good count of 141 was made at the Macon Industrial Area in Bibb Co. on 7 March (Ty Ivey, Paul Johnson).

AMERICAN WIGEON - The two seen at the CRNRA on 9 May were quite late (Eran Tomer).

MOTTLED DUCK - The ASWMA near Darien continues to be a reliable spot for this duck species. Two were seen there on 9 April (Darrell Lee), one was seen on 2 May (Jon Dunn, Giff Beaton), 14 were there on 15 May (Chris Loudermilk), and seven were recorded on 21 May (Eric Beohm).

NORTHERN SHOVELER - This duck is not usually seen in large numbers in the Piedmont, so 115 at Garden Lakes in Rome on 14 April was a good count (Marion Dobbs).

REDHEAD - An excellent count of 150 was made at Garden Lakes in the Rome area on 3 March (Marion Dobbs). Twelve were seen at SCSP on 7 March, and six were still at that location on 21 March (Chris Loudermilk).

GREATER SCAUP - Fourteen were reported at the ELHLAF on 14 March (Jerry Amerson, Marie Amerson).

LESSER SCAUP - The high count at the ELHLAF was 125 on 13 March (Jeff Sewell). One was still at this location on 22 May (Jeff Sewell).

BLACK SCOTER - Late birds were seen at Tybee Is., with five on 29 May (Carol Lambert), and one on 31 May (Jeff Sewell).

BUFFLEHEAD - A female at the Arrowhead Public Fishing Area in Floyd Co. on 8 May was somewhat late (Stephen Stewart).

HOODED MERGANSER - A female was seen in Johnson Co. on 29 May (Jim Flynn).

RED-BREASTED MERGANSER - Inland reports included two at Garden Lakes in Rome on 3 March (Marion Dobbs), four at SCSP on 9 March (Chris Loudermilk), 15 at the ELHLAF on 14 March (Jeff Sewell), four at the DeKalb Reservoir on 27 March (Jeff Sewell), 15 again at the DeKalb Reservoir on 3 April (Eran Tomer), four at SCSP on 16 April (Chris Loudermilk), and one at Carter's Lake 17 April (Bill Blakeslee et al.). A

late bird was seen at Andrew's Is. causeway (Glynn Co.) on 21 May (Eric Beohm).

SWALLOW-TAILED KITE - The one seen at Ft. Stewart on 11 March was early (Larry Carlile).

MISSISSIPPI KITE - An early arrival was seen in the Brunswick area on 18 April (fide Brad Bergstrom). Eighteen was an unusually high count for Upson Co. on 18 May (Michael Beohm).

BALD EAGLE - An adult at a nest containing two young was found in Coffee Co. on 15 March (Libbo Belger, Sheila Willis). An immature bird was seen at Murphy-Candler Lake in DeKalb Co. on 20 March (fide Jeff Sewell), and another immature was present at the ELHLAF Wetlands Center on 28 March (Michael Bell, Aubrey Scott, Jeff Sewell). Single birds were also reported from Jekyll Is. on 9 April (Lydia Thompson), Carter's Lake on 17 April (Bill Blakeslee, Aubrey Scott et al.), Telfair/Wheeler Cos. on 2 May (Jim Flynn, Earl Horn, Rusty Trump), the ASWMA on 2 May (Giff Beaton, Jon Dunn), and SCSP on 6 May (Chris Loudermilk).

BROAD-WINGED HAWK - A bird seen in Emmanuel Co. on 29 May (Jim Flynn) was near the edge of this species summer range in the state.

GOLDEN EAGLE - Two adults were seen near the old hack site in Pigeon Mt.

Cove on 20 March (John Kiser), and one adult was seen at the same location on 22 May (Michael Bell, Aubrey Scott).

MERLIN - This species was reported twice during the period at the ELHLAF. Earl Horn and Jeff Sewell saw one on 20 March, and two were seen on 18 April (Brock Hutchins et al.). Another inland report came from Greene Co., with one bird seen headed north on 10 April (Paul Sykes).

PEREGRINE FALCON - A pair in downtown Atlanta raised four young which hatched around 6 April (Jim Ozier).

RUFFED GROUSE - A single bird was a good find in Dawson Forest in Dawson Co. on 24 April (Rusty Trump). An adult with several chicks was seen at Brasstown Bald on 24 May (Paul Johnson).

BLACK RAIL - Paul Sykes reported the first bird of the year at the Greene Co. Marsh on 24 April.

KING RAIL - One was reported from the Kennesaw Marsh on 27 March (Jeff Sewell). On both 1 and 8 May, one was found at the Macon Industrial Area in Bibb Co. (Arlene Clark, Ken Clark, Ty Ivey, Paul Johnson). Two were heard at Kingfisher Landing in the Okefenokee NWR on 13 May (Robert Jones, Sheila Willis). Two adults and five young were seen at Eufaula NWR on 18 May (Eric Beohm). Finally, one was heard in Wilkinson Co. on 29 May (Ken Clark, Ty Ivey, Paul Johnson).

VIRGINIA RAIL - This species was also found at the Kennesaw Marsh, with counts of eight on 1 March (Chris Loudermilk), four on 27 March (Jeff Sewell), and two on 25 April (Giff Beaton, Karen Theodorou). Paul Sykes reported that numbers of this species were down from usual at the Greene Co. Marsh, due to a burn during the winter. He had a high count of three on 20 March. Marion Dobbs had a high count of six for the period at Floyd Marsh on 10 April.

SORA - Single birds were found at the CRNRA on 20 March (fide Jeff Sewell), in Greene Co. on 20 March (Paul Sykes), and the Kennesaw Marsh on 16 April (Becky Beaton, Giff Beaton). Five were counted in Greene Co. on

24 April (Paul Sykes), and one was at the Kennesaw Marsh on 25 April (Giff Beaton, Karen Theodorou). Another single bird was found at the Arrowhead Public Fishing Area in Floyd Co. on 8 May (Stephen Stewart).

- PURPLE GALLINULE Three were at Lake Silver in Decatur Co. during late April (fide Jeff Sewell), and two were reported at Reed Bingham State Park in Colquitt Co. on 2 May (Jim Flynn, Earl Horn, Rusty Trump). Amazingly, for the second successive spring one was reported at the Arrowhead Public Fishing Area in Floyd Co. One was seen there on 8 May (Stephen Stewart), and was found again on 14 May (Bob Zaremba) and 20 May (Stephen Stewart). Could this have been the same bird from a year ago? On 21 May Eric Beohm found this species at three separate locations with four at Harris Neck NWR, two at the ASWMA, and one at Youmanís Pond (Liberty Co.). One was found at the Ocmulgee WMA in Bleckley Co. on 28 May (Jim Flynn).
- AMERICAN COOT For not the first time, this species was encountered at Kennesaw Mt. on a spring migration walk. Two were found quite high up the mountain on 17 March, and one was recorded on 25 March (Kevin Danchisen).
- SANDHILL CRANE A number of late birds were reported this spring from various locations. A flock of ten were seen at the CRNRA on 3 April (Helen Ogren), two were on Cumberland Is. on 18 April (Sheila Willis), two were at Sapelo Is. on 15 May (Fred Hay *fide* Doris Cohrs), and one was heard in Clinch Co. on 22 May (Sheila Willis).
- WILSON'S PLOVER Fourteen was a good count on Cumberland Is. on 28 March (Sheila Willis).
- SEMIPALMATED PLOVER Two were seen at the ELHLAF on 6 May (Jeff Sewell), and four were at the Arrowhead Public Fishing Area in Floyd Co. on 22 May (Michael Bell, Aubrey Scott).
- PIPING PLOVER This species is accidental in the interior, and the one found at the ELHLAF on 15 April produced the first Atlanta area record (Brock Hutchins). It was still at the same location on the next day (Eric Beohm, Carol Lambert, Francis Stiteler).
- BLACK-NECKED STILT The three seen at Darien on 9 April were fairly early (Darrell Lee).
- AMERICAN AVOCET Seventeen were seen at Jekyll Is. on 13 March (Chris Loudermilk), and 15 were at Andrews Is. near Brunswick on 9 April (Darrell Lee). One was reported at SCSP on 9 May for an extremely rare inland record (Tony Barger).
- UPLAND SANDPIPER Laurens Co. was once again the hotspot for this species, with 29 on 10 April (Earl Horn, Tommy Patterson, Aubrey Scott, Jeff Sewell), and 16 on 14 April (Giff Beaton). One was seen at Thomas Bros. Grass in Floyd Co. on 17–18 April by many observers attending the spring GOS meeting in Rome.
- WHIMBREL Impressive counts were 1480 at Gould's Inlet on 14 May, and 2000+ at St. Catherines Is. on 15 May (Brad Winn).
- RED KNOT On Cumberland Is., 2078 migrants were counted on 28 March (Sheila Willis).
- SEMIPALMATED SANDPIPER Jeff Sewell had a count of 21 at ELHLAF on 6 May.

- WESTERN SANDPIPER One was reported from the ELHLAF on 22 April (Paul Raney), and two were found at the same location on 6 May (Jeff Sewell).
- LEAST SANDPIPER Fifty was the high count for ELHLAF on 6 May (Jeff Sewell).
- WHITE-RUMPED SANDPIPER One was found at the Suwannee Canal Recreation Area in the Okefenokee NWR on 20 April (Cindy Thompson, Sheila Willis), five were at the ASWMA on 2 May (Giff Beaton, Jon Dunn), one remained at the ELHLAF from 6–11 May (Chris Loudermilk, Paul Raney, Jeff Sewell), and three were seen at Lake Buchanan in Haralson Co. on 7 May (Michael Bell). Back at the ELHLAF, five were reported on 16 May (Aubrey Scott), and two were seen there on 26 May (Chris Loudermilk).
- STILT SANDPIPER Six were found at the ASWMA on 2 May (Giff Beaton, Jon Dunn). Two were a good find at the ELHLAF on 6 May (Jeff Sewell), and one was seen there on 8 May (Eran Tomer).
- SHORT-BILLED DOWITCHER Good inland reports were seven at the Macon Brickyard Ponds on 27 March (Ty Ivey, Paul Johnson), four in Laurens Co. on 10 April (Tommy Patterson et al.), and three, also in Laurens Co., on 14 April (Giff Beaton).
- LONG-BILLED DOWITCHER An excellent count of 50 was made at the ASWMA on 2 May (Giff Beaton, Jon Dunn).
- COMMON SNIPE Paul Sykes had a good count of 107 in northern Greene Co. on 20 March.
- WILSON'S PHALAROPE One was reported from Jekyll Is. on 21 May (Eric Beohm).
- LAUGHING GULL This species is rarely seen far inland, so one at Lake Buchanan in Haralson Co. on 7 May was noteworthy (Michael Bell). Another good find was the first summer bird reported at Lake Sinclair on the Baldwin/Putnam Co. line on 31 May (Jim Flynn).
- BONAPARTE'S GULL Twelve was a good count for the ELHLAF on 28 March (Jackie Heyda et al.), while the two seen at SCSP on 8 May were somewhat late (Tony Barger).
- RING-BILLED GULL A large number of this species wintered at the DeKalb Reservoir, and Jeff Sewell had counts of 1000 on 6 March and 500 on 27 March.
- CASPIAN TERN Two seen at Lake Buchanan in Haralson Co. on 5 April were a rare inland sighting (Michael Bell).
- COMMON TERN Sheila Willis had an excellent count of 333 on Cumberland Is. on 28 March.
- FORSTER'S TERN One was reported from Lake Park in Lowndes Co. on 14 April and again on 19 April (Kristi Avera, Barbara Passmore).
- LEAST TERN An early arrival was seen at Jekyll Is. on 2 April (Lydia Thompson). On 28 May, Larry Carlile found a colony on a white gravel rooftop in the Fort Stewart cantonment area, containing 39 eggs and 27 chicks.
- BRIDLED TERN Three were found on a pelagic trip out of Savannah on 30 May (Giff Beaton et al.).
- SOOTY TERN The same pelagic trip on 30 May produced one of this species (Giff Beaton et al.).

EURASIAN COLLARED-DOVE - This invading species now appears to be establishing a foothold in the northwest part of the state, as it was reported throughout the period from Carroll and Floyd Cos. (various observers). A pair were observed building a nest in Athens (Clarke Co.) on 5 April (Marion Dobbs).

WHITE-WINGED DOVE - Four were reported from Sapelo Is. on 12 March (Charles Blem), one was seen in Houston Co. from 26–28 March (Jim Flynn, Larry Ross), and two were found, again at Sapelo Is., during May

(fide Jeff Sewell).

COMMON GROUND-DOVE - Eight were seen at Central City Park in Macon on 24 April, and 10 were at the same location on 10 May (Eric Beohm).

YELLOW-BILLED CUCKOO - A good count of 15 was made at the Macon Brickyard Ponds (Bibb Co.) on 8 May (Ty Ivey, Paul Johnson et al.).

RUBY-THROATED HUMMINGBIRD - The earliest report came from Walton Co. on 22 March (Bobby Cox).

RUFOUS HUMMINGBIRD - A bird that wintered in Tallapoosa in Haralson Co. was last seen on 4 April (Michael Bell).

YELLOW-BILLED SAPSUCKER - One seen at Kennesaw Mt. on 24 April was quite late (Bob Zaremba et al.).

RED-COCKADED WOODPECKER - As of 28 May, 157 nests were confirmed at Fort Stewart, representing a 57% increase over the number of nests found in 1994, the year that intensive monitoring and management began for this species at this location (Larry Carlile).

LEAST FLYCATCHER - A bird was seen at the Sky Valley Golf Course in Rabun Co., where at least one summered last year, on 20 May (Brock

Hutchins).

EASTERN KINGBIRD - Several were seen in Putnam Co. on the very early date of 18 March (Billy Dunbar).

YELLOW-THROATED VIREO - Early reports were of one at Kennesaw Mt. on 20 March (Kevin Danchisen et al.), and on the same day one was seen in Butts Co. (Michael Bell, Aubrey Scott).

WARBLING VIREO - One was seen at SCSP on 7 May (Chris Loudermilk), and again at the same location on 9 May (Chris Loudermilk, Aubrey Scott).

Another single bird was at Kennesaw Mt. on 8 May (Kevin Danchisen).

TREE SWALLOW - A number of observers reported this species once again nesting in nest boxes at ELHLAF during the period.

BANK SWALLOW - Twenty were seen at ELHLAF on 2 May during an Atlanta Audubon Society field trip.

CLIFF SWALLOW - By the end of the period there were several reports of this species in north Georgia, and it has now been confirmed nesting at a number of sites in the region.

BARN SWALLOW - The first birds of the year were reported from the ELHLAF on the early date of 13 March (Carol Lambert). Nesting was confirmed in

Clinch and Tattnall Cos. (Sheila Willis).

SEDGE WREN - The Kennesaw Marsh is a reliable spot for this species in migration, and five were found there on 27 March (Jeff Sewell), one on 3 April (Giff Beaton), and three on 25 April (Giff Beaton, Karen Theodorou). Two were found in Floyd Co. on 17 April (Earl Horn, Rusty Trump), one was seen at Central City Park in Macon on both 24 April and 10 May (Eric Beohm), one was found at the Albany Nursery

WMA in Dougherty Co. on 2 May (Jim Flynn), one was in Upson Co. on 7 May (Eric Beohm), and one was at the CRNRA on 22 May (Gordon McWilliams et al.).

MARSH WREN - One seen in Haralson Co. on 11 May was a good find (Michael

Bell).

GRAY-CHEEKED THRUSH - The only reports received were of one at Kennesaw Mt. on 24 April (Bob Zaremba et al.), one at Fernbank Forest in DeKalb Co. on 24 April (fide Georgann Schmaltz), two at Blackjack Mt. in Cobb Co. on 8 May (Kevin Danchisen), and one at Kennesaw Mt. on 11 May (Giff Beaton et al.).

WOOD THRUSH - The first one reported was from the ELHLAF Wetlands Center on 30 March (Carol Lambert).

AMERICAN PIPIT - The eight birds seen during an Atlanta Audubon Society field trip at ELHLAF on 2 May were rather late.

BLUE-WINGED WARBLER - The high count was five at Kennesaw Mt. on 24 Apr. (various observers).

TENNESSEE WARBLER - A late bird was seen in Thomaston on 24 May (Michael Beohm).

NASHVILLE WARBLER - Four was a good count at Kennesaw Mt. on 24 April (v.ob.).

CHESTNUT-SIDED WARBLER - The high count at Kennesaw Mt. was 18 on 2 May (Bruce Dralle et al.).

CAPE MAY WARBLER - An early bird was seen at the ELHLAF Wetlands Center on 31 March (Carol Lambert). Good counts of 50 were made at Fernbank Forest (DeKalb Co.) on both 1 May and 8 May (fide Georgann Schmaltz).

BLACK-THROATED BLUE WARBLER - Ten was a good count at Fernbank Forest in DeKalb Co. on 8 May (fide Georgann Schmaltz).

BLACK-THROATED GREEN WARBLER - A late bird was seen at Hamburg State Park in Washington Co. on 29 May (Jim Flynn).

BLACKBURNIAN WARBLER - The high count was 14 at Kennesaw Mt. on 8 May (Kevin Danchisen et al.).

PRAIRIE WARBLER - One seen in Floyd Co. on 13 March was early (Chris Loudermilk).

PALM WARBLER - This warbler is relatively easy to identify as to subspecies, especially in alternate plumage. Of the 208 seen at Kennesaw Mt. during spring migration, three were identified as Yellow Palm Warblers.

BAY-BREASTED WARBLER - The high count from Kennesaw Mt. was 11 on 8 May (Kevin Danchisen et al.).

BLACKPOLL WARBLER - The high count was 30+ at CRNRA on 22 May (Gordon McWilliams et al.).

CERULEAN WARBLER - A total of 86 were reported from Kennesaw Mt. during spring migration. This number is down from the 110 counted a year ago.

PROTHONOTARY WARBLER - Jeff Sewell found one at Kennesaw Mt. on 17
April for a first ever record for the mountain. The bird was seen again the
next day by a number of observers. Four to five were counted at the
CRNRA on 1 May (Aubrey Scott).

WORM-EATING WARBLER - Several were heard singing on territory near Allatoona Dam on 30 May (Chris Loudermilk, Aubrey Scott).

SWAINSON'S WARBLER - Eric Beohm found four in the Macon area on 24 April, one was found in Union Co. on 25 April (Michael Bell), one was in Glynn Co. on 2 May (Rebecca Schrapansky), four were in the Big Hammock WMA on 2 May (Giff Beaton, Jon Dunn), one was heard in Upson Co. on 8 May (Eric Beohm), one was heard in Butts Co. on 10 May (Eric Beohm), and three were located in the Savannah area on 31 May (Giff Beaton, Jim Flynn, Earl Horn).

CONNECTICUT WARBLER - One was found by Jeff Sewell at Kennesaw Mt. on 8 May, and remained there until 11 May (Kevin Danchisen). One was

seen at Piedmont NWR on 27 May (Eric Beohm).

SCARLET TANAGER - The high count was 21 at Kennesaw Mt. on 24 April (Bob Zaremba et al.).

BACHMAN'S SPARROW - Several were reported from the Pinelog WMA in Bartow Co. during May by a number of observers. A new location for this species was found in Glascock Co. (Jim Flynn).

CHIPPING SPARROW - This species is absent from the immediate coastal area in summer, and Doris Cohrs reported seeing her last one in the Darien

area on 22 April.

VESPER SPARROW - At least 15 were seen in the Rum Creek WMA on 20 March (Michael Bell, Aubrey Scott). Other reports during mid-March included seven at CRNRA, and four at Tribble Mill Park in Gwinnett Co. (fide Jeff Sewell). Four were found in Upson Co. on 1 April (Eric Beohm).

HENSLOW'S SPARROW - Two were found at the usual location at Paulk's

Pasture WMA on 13 March (Chris Loudermilk).

LECONTE'S SPARROW - One was seen in Greene Co. on 24 April (Paul Sykes).

HARRIS'S SPARROW - The bird that wintered at the Chattahoochee Nature Center in Fulton Co. was last reported on 19 March (Eugene Keferl).

WHITE-CROWNED SPARROW - One was seen in the Macon area on 24 April (Eric Beohm).

DARK-EYED JUNCO - The one seen at Kennesaw Mt. on 4 May was late (Kevin Danchisen).

ROSE-BREASTED GROSBEAK - An excellent count was the 32 reported at Kennesaw Mt. on 24 April (Bob Zaremba et al.).

PAINTED BUNTING - A male was seen at Central City Park in Macon on 10

May (Eric Beohm).

DICKCISSEL - A singing male was seen in Greene Co. on 24 April (Paul Sykes). Two were a good find at the ELHLAF on 2 May (Jeff Sewell et al.), and another singing male was found in Houston Co. during early May (Ashley Harrison).

BOBOLINK - Approximately 100 were seen in Upson Co. on 23 April (Eric Beohm). A count of 114 was made in Greene Co. on 24 April (Paul Sykes). A few were reported from the Etowah Indian Mounds in Bartow Co. on 30 April (John Swiderski), while 100 were found at the ELHLAF

on 8 May (Eran Tomer).

RUSTY BLACKBIRD - Fifteen were reported from Floyd College on 6 March (Michael Bell). One seen at Kennesaw Mt. on 17 March seemed to be out of place (Kevin Danchisen et al.), and eight were counted in Haralson Co. on 2 April (Michael Bell).

- SHINY COWBIRD A male at the ASWMA on 21 May was an excellent find (Eric Beohm).
- BALTIMORE ORIOLE The high count was 12 at Kennesaw Mt. on 24 April (Bob Zaremba et al.).
- PURPLE FINCH Following a slow winter for finches in the state there were just a few reports of this species. Two were in Haralson Co. on 2 March (Michael Bell), one was in the McDonough area on 5 March (Sally Ramer), one was at Kennesaw Mt. on 2 April (Kevin Danchisen), and one was seen in the Thomaston area on both 2 and 8 April (Eric Beohm).
- RED CROSSBILL A pair was a great find in the Pinelog WMA in Bartow Co. on 12 May (Kevin Danchisen, Deb Zaremba). One or two birds were subsequently seen by several observers through the end of the period.
- PINE SISKIN The only reports were of one in Tucker on 4 March (Karen Theodorou), two at Kennesaw Mt. on 18 March (Kevin Danchisen et al.), and three or four in Sky Valley (Rabun Co.) on 25 May (Paul Johnson).
- EVENING GROSBEAK A rare find this spring was one at the CRNRA on 23 April (Earl Horn), and again at the same location on 25 April (fide Jeff Sewell).

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FROM THE FIELD JUNE—JULY 1999

As might be expected, the summer season produced little in the way of exceptional rarities, though two of the more spectacular bird species did show up in the state. Giff Beaton, Earl Horn, and Jim Flynn saw a Magnificent Frigatebird at Jekyll Island while working on a "big day." This was just one of several notable sightings they had during the 24-hour period. A Scissor-tailed Flycatcher that made a two day visit to E.L.Huie during July must have been a thrilling sight for those lucky enough to see it. The bird was originally seen flying over the ponds by Terry and Peggy Moore and Mary Ann Vernocy. This species is increasing as a breeder and summer resident in Alabama, so perhaps it may be found breeding again soon in Georgia. A pair nested successfully near Cartersville in Bartow County during the summer of 1988 for Georgia's only nesting record to date.

Abbreviations used include: ASWMA - Altamaha State Waterfowl Management Area, McIntosh Co.; ELHLAF - E.L.Huie Land Application Facility, Clayton Co.; Kennesaw Mt. - Kennesaw Mountain National Battlefield Park, Cobb Co.; MBBP - Merry Bros. Brickyard Ponds in Augusta; MIA - Macon Industrial Area, Bibb Co.;

NWR - National Wildlife Refuge; SP - State Park.

SPECIES ACCOUNTS

- DOUBLE-CRESTED CORMORANT Six were seen at the ELHLAF on 12 July (Carol Lambert).
- MAGNIFICENT FRIGATEBIRD An exciting find was the one seen at Jekyll Is. on 7 June (Giff Beaton, Jim Flynn, Earl Horn).
- LEAST BITTERN The bird that was reported at the Arrowhead Public Fishing Area in Floyd Co. during May was last seen on 15 June (Stephen Stewart).
- GREAT EGRET The high count for the ELHLAF was 18 on 14 July (Carol Lambert)
- SNOWY EGRET One was seen at Buchanan Lake in Haralson Co. on 16 June (Michael Bell), one was found in the Macon area on 2 July (Eric Beohm), four were at the ELHLAF on 12 July (Carol Lambert), and one was seen in Paulding Co. on 18 July (Michael Bell, Randy Cooper).
- LITTLE BLUE HERON A pair of adults were present at Buchanan Lake in Haralson Co. since early May, and on 7 July Michael Bell found two adults and three immature birds at this location. Susanna Rinard reported finding two adults at a pond in Paulding Co. on 16 June, where at least one had been present since 27 May. On 26 June, she found one immature at the same pond.
- REDDISH EGRET Two were seen at Cumberland Is. on 10 July (Giff Beaton).

- CATTLE EGRET Five were an unusual sighting at the ELHLAF on 20 July (Eric Beohm). Four were seen at Berry College in Floyd Co. during late June (Marion Dobbs).
- YELLOW-CROWNED NIGHT HERON Twenty-six were reported at Youman's Pond in Liberty Co. on 7 June (Giff Beaton, Jim Flynn, Earl Horn).
- WHITE IBIS Two immatures were seen at the ELHLAF on 14 July (Carol Lambert), and another immature was at Arrowhead Waterfowl Area in Floyd Co. on 23 July (Michael Bell).
- GLOSSY IBIS Four were found at the ASWMA on 7 June (Giff Beaton, Jim Flynn, Earl Horn), and five were seen at Harris Neck WMA on 28 June (Darrell Lee).
- ROSEATE SPOONBILL Twelve were reported from near Brunswick in Glynn Co. on 7 June (Giff Beaton, Jim Flynn, Earl Horn), and three were seen in the same area on 7 July (Brad Winn).
- WOOD STORK An immature was a good find at The Georgian Resort golf course in Paulding Co. on 7 July (Randy Cooper). The bird remained at this location through at least 28 July (Michael Bell). Another bird was reported at Dyar's Pasture in Greene Co. on 18 July (Eugenia Thompson).
- ROSS'S GOOSE One of the birds that were present in Madison Co. during the spring was still there on 13 June (Jim Flynn). This is the first summer record for this species in Georgia.
- MOTTLED DUCK Giff Beaton, Jim Flynn, and Earl Horn had 22 at the ASWMA on 7 June.
- BLUE-WINGED TEAL Two were seen at the ASWMA on 7 June (Giff Beaton, Jim Flynn, Earl Horn), and a pair were present at Oxbow Meadows in the Columbus area on 16 June (Walt Chambers).
- NORTHERN PINTAIL A male was seen at the ELHLAF on 6 June (Patrick Brisse, Terry Moore), and on 12 June (Paul Raney). Then a female was reported at the same location during most of July (many observers).
- LESSER SCAUP A male was seen at St. Simons Is. on 7 June (Giff Beaton, Jim Flynn, Earl Horn), and a female was at MBBP on 26 June (Anne Waters).
- RED-BREASTED MERGANSER A female was seen along the Andrews Island Causeway in Glynn Co. on 7 June (Giff Beaton, Jim Flynn, Earl Horn).
- SWALLOW-TAILED KITE Three were reported in Dodge Co. along the Ocmulgee River on 28 June (Donny Screws).
- MISSISSIPPI KITE One was seen in Houston Co. on 9 June (Dot Freeman), and three were found in the Brunswick area on 24 June (Sheila Willis). However, the most interesting report came from the Conyers area, where one to two birds were present from 2–21 July (Becky Boston, Francis Michael, Jim Wilson). This is the third year in succession that this species has been found at that location.
- BALD EAGLE One reported in White Co. on 14 June was unusual for the area (fide Mark Oberle).
- SHARP-SHINNED HAWK All reports of this species in summer are noteworthy. One was seen in the Stockbridge area in Henry Co. on 6 June (Patrick Brisse, Terry Moore), one was reported at Cloudland Canyon SP in Dade Co. on 11 June (Giff Beaton et al.), and one was

- seen near Martin (Stephens/Franklin Cos.) on 12 June (Giff Beaton et al.)
- BROAD-WINGED HAWK On 8 June Jim Flynn found one in Laurens Co. and one in Treutlen Co. This species is a sparse breeder in the upper coastal plain. One was seen near Darien on 23 June (Paul Sykes), and one was spotted near Waycross on 2 July (Sheila Willis).

AMERICAN KESTREL - One was seen in the Thomaston area in Upson Co. on 24 July (Eric Beohm).

PEREGRINE FALCON - A bird seen in Riverdale in Clayton Co. on 20 June by Malcolm Hodges was presumably one of the downtown Atlanta birds.

BLACK RAIL - Three were heard at the ASWMA on 7 June for an exciting find (Giff Beaton, Jim Flynn, Earl Horn). One was heard again at the same location, on 16 June (Darrell Lee).

VIRGINIA RAIL - Two were found at the marsh at Floyd College in Floyd Co. on 19 July (Giff Beaton, Marion Dobbs).

PURPLE GALLINULE - Darrell Lee found a family group, including two downy chicks, at the Harris Neck NWR in Liberty Co. on 20 June.

AMERICAN COOT - A pair summered at Buchanan Lake in Haralson Co., with courtship behavior being noted (Michael Bell). Three were observed at the ELHLAF on 12 July (Carol Lambert).

SANDHILL CRANE - Four were found in Clinch Co. on 13 June (Jerry Amerson, Marie Amerson).

WILSON'S PLOVER - Lydia Thompson was able to confirm breeding at Jekyll Is., where she observed at least 14 adults and seven young during June.

PIPING PLOVER - Two were seen at Jekyll Is. on 22 July (Rusty Trump).

WILLET - Two were seen at the MIA on 17 July for a first record for Bibb County (Ty Ivey, Paul Johnson).

WHIMBREL - Ten were reported at Jekyll Is. on 7 June (Giff Beaton, Jim Flynn, Earl Horn), and six were seen at Cumberland Is. on 10 July (Giff Beaton).

WESTERN SANDPIPER - Two were found at the ELHLAF on 17 July (Patrick Brisse, Jeff Sewell).

PECTORAL SANDPIPER - One at Buchanan Lake in Haralson Co. on 13 July (Michael Bell) was quite early.

STILT SANDPIPER - As many as three were at the ELHLAF from 13 through 15 July (many observers).

SHORT-BILLED DOWITCHER - Three were present at the ELHLAF from 14-17 July (many observers), and two were seen at the MIA on 17 July (Ty Ivey, Paul Johnson).

LAUGHING GULL - One was reported in Upson Co. on 28 June for a rare inland sighting (Jessica Beohm).

CASPIAN TERN - One seen inland at Lake Jackson on 4 July was a good find (Earl Horn, Rusty Trump).

COMMON TERN - Single birds were reported from Jekyll Is. on 4 June (Lydia Thompson), St. Simons Is. on 7 June (Giff Beaton, Jim Flynn, Earl Horn), again at Jekyll Is. on 26 June (Lydia Thompson), and Cumberland Is. on 10 July (Giff Beaton).

FORSTER'S TERN - One was seen at the MIA on 17 July (Ty Ivey, Paul Johnson).

LEAST TERN - One was seen at the ELHLAF on 17 July for a rare inland sighting (Patrick Brisse, Jeff Sewell).

BLACK TERN - Two were found at Cumberland Is. on 10 July (Giff Beaton).

EURASIAN COLLARED-DOVE - Notable sightings were the four in Lavonia in Hart Co. on 6 June (Bill Blakeslee), one near the state capitol in Atlanta on 19 July (Eric Beohm), and 41 in the Thomaston area in Upson Co. on 24 July (Eric Beohm).

COMMON GROUND-DOVE - An excellent count was the 28 in Central City Park in Macon on 2 July (Eric Beohm).

WILLOW FLYCATCHER - One was seen in Greene Co. on 7 June (Giff Beaton, Jim Flynn, Earl Horn). This species was also found at the regular breeding site near the Dillard House in Rabun Co. on 8 June (Pierre Howard) and on 19 June (Chris Loudermilk). A bird was seen and heard in Blairsville in Union Co. on 14 July, at the same location were two birds were found last year (Dot Freeman).

LEAST FLYCATCHER - For the second year in succession a bird summered near the eighth green at the Sky Valley Golf Course in Rabun Co. One was reported there on 8 June (Pierre Howard) and on 19 June (Chris Loudermilk).

GRAY KINGBIRD - A pair were observed in Brunswick on 24 June (Sheila Willis). Four were seen at Jekyll Is. on 22 July (Rusty Trump).

SCISSOR-TAILED FLYCATCHER - One was present at the ELHLAF on 25
July (Peggy Moore, Terry Moore, Mary Ann Vernocy, Bob Zaremba,
Deb Zaremba) and was seen there again the next day (Carol Lambert).

BLUE-HEADED VIREO - A pair was observed building a nest at Tally Mt. in Haralson Co. during June (Michael Bell).

HORNED LARK - An adult and a fledgling were seen in Pulaski Co. on 5 June (Dan Guynn, Ty Ivey).

TREE SWALLOW - Two were seen in Greene Co. on 7 June (Giff Beaton, Jim Flynn, Earl Horn). Carol Lambert reported seeing a young bird looking out of a nestbox at the ELHLAF on 14 July.

BANK SWALLOW - Ten were reported from the ELHLAF on 17 July (Patrick Brisse, Jeff Sewell). The high count for the period was the 37 seen migrating southward in Greene Co. on 26 July (Paul Sykes).

CLIFF SWALLOW - This species is continuing to expand its breeding range in north Georgia. This summer nesting was confirmed in Bartow, Carroll, Coweta, Elbert, Floyd, Greene, Hancock, Hart, Heard, Jasper, Lincoln, Monroe, Murray, and Putnam Counties (fide Giff Beaton). Walt Chambers found at least one nest in Columbus on 22 July, which is the southern-most confirmed nesting of this species in Georgia. Along the coast, Darrell Lee reported 30–50 migrants at Harris Neck NWR on 25 July. Paul Sykes had an impressive count of 216 in Greene Co. on 26 July.

BARN SWALLOW - Sheila Willis found this species nesting for the first time in the Okefenokee NWR on 8 June.

HOUSE WREN - One was found in the Tyrone area in Fayette Co. on 14 July (Giff Beaton). This species may be continuing to expand its breeding range south.

WINTER WREN - One was heard singing at Brasstown Bald on 6 July (Dot Freeman), where this species evidently continues to breed in small numbers.

- VEERY Dot Freeman found a number of singing birds in the vicinity of Vogel SP in Union Co., at an elevation of approximately 1000 m, on 29 June.
- BLUE-WINGED WARBLER Jim Flynn found three territorial birds in Dawson Forest during June, where he states there is a small but stable breeding population.

BLACKBURNIAN WARBLER - An early migrant was spotted at Kennesaw Mt. on 16 July (Giff Beaton, Kevin Danchisen).

CERULEAN WARBLER - The first two migrants were seen at Kennesaw Mt. on 20 July (Giff Beaton, Susanna Rinard).

BLACK-AND-WHITE WARBLER - An early migrant was seen near Darien on 21 July (Doris Cohrs).

AMERICAN REDSTART - Giff Beaton found four of this local breeder along the Oconee River on 5 June. One seen in a Decatur backyard on 12 June was an unusual find (Jerry Brunner). A pair and a fledgling were seen in Elbert Co. on 13 June (Giff Beaton, Jim Flynn). An early migrant was reported from near Darien on 22 July (Doris Cohrs).

WORM-EATING WARBLER - Six were counted at Cloudland Canyon SP in Dade Co. on 11 June (Giff Beaton, Bruce Hallett).

SWAINSON'S WARBLER - Three were found in Evans/Bulloch Cos. on 2 June (Giff Beaton, Andy Kinsey), one was found along the Oconee River on 5 June (Giff Beaton), and one was found in Rabun Co. on 20 June (Jim Flynn). A pair summered near Tallapoosa in Haralson Co. (Michael Bell).

OVENBIRD - Two found in Fayette Co. on 14 July by Giff Beaton may have been close to the southern limit of this species' breeding range in Georgia.

SCARLET TANAGER - This species continues to increase as a breeder in the Piedmont as evidenced by the 11 found at various locations in Haralson Co. during June (Michael Bell). A male seen in Upson Co. on 2 July was quite far south for the time of year (Walt Chambers).

BACHMAN'S SPARROW - While doing work for the Georgia Breeding Bird Atlas, Sheila Willis found this species present in small numbers in Charlton, Clinch, Echols, Glynn, Jeff Davis, and Ware Counties. Two were also reported in Brantley Co. on 13 June (Jerry Amerson, Marie Amerson).

GRASSHOPPER SPARROW - Giff Beaton had good counts, with 20 in Morgan Co. on 6 June and 40 in Stephens/Franklin Cos. on 12 June. Paul Sykes found 14 in about one hectare in northern Greene Co. on 26 July, which he feels is evidence of a good nesting season in the area.

WHITE-THROATED SPARROW - Most unusual was one seen in Fulton Co. on 2 June (Russ Wigh).

PAINTED BUNTING - A pair was a good find in Randolph Co. on 1 July (Walt Chambers). A male was seen at Central City Park in Macon on 2 July (Eric Beohm). Paul Sykes reports that nesting was late in the Atlantic Coast population (North Carolina to Florida), with few young-of-the-year observed through the end of July.

DICKCISSEL - A pair were found in Franklin Co. on 12 June (Giff Beaton, Karen Theodrou), and a female carrying food was seen in Walker Co. on 25 July (Richard Hester, Helena Wood).

YELLOW-HEADED BLACKBIRD - One was seen in Jenkins Co. on 1 June (Carol Eldridge *fide* Anne Waters).

SHINY COWBIRD - A male seen near Stockbridge in Henry Co. on 26 June by Paul Raney was a first Atlanta area record.

BALTIMORE ORIOLE - Two were seen at Central City Park in Macon on 19 June (Ocmulgee Audubon Society), and a female was seen on a nest at this location on 2 July (Eric Beohm). Two were seen in Spalding Co. on 4 July (Earl Horn, Rusty Trump), and four were found in Floyd Co. on 25 July (Chris Loudermilk).

RED CROSSBILL - A female was photographed at a feeder in the Dunwoody area on 8 and 9 June (E.J. Sadler).

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FROM THE LITERATURE

"From the Literature" provides brief reviews of recent ornithological studies conducted in the state of Georgia. The reviews are designed for a general reader and are meant to make ornithological research in Georgia available to a wider audience. — The Editors.

The diet of wintering Double-crested Cormorants feeding at lakes in the southeastern United States. J. F. Glahn, J. B. Harrel, and C. Vyles. 1998. Colonial Waterbirds 21(3):431-437. — Double-crested Cormorants are common in Georgia and other southeastern states and they consume a wide range of fish species, including commercially valuable species such as bluegill and channel catfish. In fact, there has been considerable concern in recent years that the healthy populations of Double-crested Cormorants that winter on lakes and ponds in the southeast may harm sport fishing. This study explored that concern by quantifying the stomach contents of 142 cormorants collected on Lake Beulah in Mississippi and 51 collected on Lake Eufaula in Georgia. The authors discovered that cormorants from these lakes ate primarily shad (Dorosoma spp.) and sunfish (Lepomis spp.). However, the diet also included catfish (Ictalurus spp.), which were most likely captured in nearby catfish ponds. Based on the availability of fish measured in Lake Beulah, cormorants appear to consume the fish most available to them, with perhaps a slight preference for bluegill (Lepomis macrochirus). Bioenergetic calculations suggest, however, that cormorants consume only a small percentage of the bluegill available. Overall, the authors conclude that Double-crested Cormorants wintering in the southeast are opportunistic foragers that do not appear to have an appreciable negative effect on southern sport fisheries.

Concomitant mycotic and verminous pneumonia in a Blue Jay. E. A. Young, T. E. Cornish, and S. E. Little. 1998. Journal of Wildlife Diseases 34(3):625–628. — Birders and scientists that spend time in the field inevitably encounter dead and dying birds. In many cases the cause of death is not apparent, and we often do not consider the wide range of disease risks that wild birds face. This paper reports the results of a necropsy on a Blue Jay found near death in Georgia. The jay suffered from infection by both nematodes (Diplotriaena tricupsis) and fungus (Aspergillus fumigatis). Nine large nematodes (roundworms) were lodged in the jay's thoracic and abdominal air sacs and in the pericardial sac. Nematode eggs were found in the lungs. Fungal lesions were found in the air sacs and lungs. This is the first time these two sources of infection have been found together in a bird. Papers such as this give us a renewed appreciation for the important role that parasites and other disease-causing organisms play in avian ecology.

Neotropical migratory breeding bird communities in riparian forests of different widths along the Altamaha River, Georgia. M. F. Hodges, Jr. and D. G. Krementz. 1996. Wilson Bulletin 108(3):496–506. — A variety of conservation organizations have made preservation of habitats along the Altamaha River a high priority. A common question concerns how wide

corridors of riparian habitat should be in order to support healthy communities of breeding birds. This study addressed that issue by quantifying the relationship between the width of riparian forests and the composition and abundance of Neotropical breeding bird communities. The authors conducted censuses of breeding birds along transects located in narrow (<350 m), medium (400-700 m). and wide (>1000 m) forest corridors. A total of 48 species (including 19 Neotropical migrants) was recorded on these censuses. On average, wider corridors had more species. For the six species with the largest sample sizes (Acadian Flycatcher, Blue-gray Gnatcatcher, White-eved Vireo, Red-eved Vireo, Northern Parula, and Prothonotary Warbler), density of birds was actually highest in forest corridors of medium width. Northern Parulas, White-eyed Vireos, and Red-eyed Vireos, showed a significantly greater probability of occurrence in wider corridors. There were no major differences in habitat composition or structure among corridors of different width. Interestingly, the river itself appeared to be a barrier to the movement of forest birds; only Prothonotary Warblers were seen to cross the river on a regular basis.

A NEW COVER FOR THE ORIOLE

John M. Swiderski, President

With this volume *The Oriole*, now in its 63rd year of publication, introduces a new color cover "Orchard Oriole" by Richard A. (Dick) Parks.

Dick Parks was just a teenager when the Georgia Ornithological Society was formed in 1936, but he already had a keen interest in birds and became a charter member of the Society. He has not only maintained his association with the Society all these year, but he has been an active member. He rarely misses an Executive Committee meeting where his contributions are greatly appreciated. He served as editor of this journal from 1951 to 1955 and as co-editor in 1950. In 1976 Dick received the Earle R. Greene Memorial Award in recognition of his long service to the Society.

Dick made his career work in architecture, but painting has been his life-long passion. His bird paintings and prints are found in the homes and offices of many members of the Society. He has been most generous to the Society with his artwork over the years. He has provided bird paintings and sketches for the covers of most of the Society's Occasional Publications, the 60th anniversary booklet, stationery and sales items.

The Executive Committee felt it was most appropriate that his rendition of the Orchard Oriole would become the fourth cover painting for *The Oriole*.

THE ORIOLE

Quarterly Journal of the Georgia Ornithological Society

Application for membership in the Georgia Ornithological Society may be made to the Treasurer. *The Oriole* is sent without charge to all members not in arrears for dues. Send changes of address, claims for undelivered or defective copies, and requests for information relative to advertising and back numbers to the business manager.

Instructions to Authors

The Oriole publishes original articles that advance the study of birds in the state of Georgia and adjoining regions. The Oriole welcomes submission of articles describing the occurrence, distribution, behavior, or identification of birds in Georgia, as well as scientific studies from all fields of ornithology. All manuscripts should be submitted in triplicate to the editors.

COPY – Manuscripts should be *typed*, *double-spaced* throughout, on quality paper. Underline scientific names only. Use the same font size and style throughout the manuscript. Manuscripts should include a title page (including names and addresses of all authors), text (beginning on page 2), literature cited, tables, figure legends (on a separate page), and figures. Number all pages through the tables in the upper right-hand corner. Avoid footnotes.

STYLE - For questions of style consult the CBE Style Manual, 5th edition. It is available from the Council of Biology Editors, Inc., Bethesda, Maryland 20814.

LITERATURE CITED – List all reference cited in the text alphabetically by the first author's last name in a Literature Cited section. If there are three or fewer citations, they should be incorporated parenthetically in the text). Citations should conform to the style of a recent issue of *The Oriole*.

NOMENCLATURE – Common names of bird species should be capitalized. Provide the scientific name (underlined) at the first mention of each species. Nomenclature should follow the American Ornithologists' Union Check-list of North American Birds (7th edition), 1998.

TABLES - Tables should be formatted with the size of *The Oriole* in mind and should be interpretable without reference to the text.

FIGURES - Figures should be appropriate for photoreproduction without retouching.

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