

scissors; the resulting hemorrhage caused congestion of the respiratory tract via the air-sacs. Many birds were operated on weekly or biweekly for three to eight weeks without any ill effects. In such cases the incision was made on the old line, and healing was as prompt in the later operations as in the first. For the most part, these birds were kept in light chambers for photoperiodicity studies, and the operation seemed to have no effect on their ability to respond to day length increments since their response was similar to that of unoperated birds. Occasional weighing of the birds showed that the operation caused no loss of body weight, and in all respects they appeared to be normal and healthy.

In field studies 27 individuals of 5 species, ranging in size from Oregon Juncos to Brown Towhees, were examined surgically, color banded, and released for observation. These birds were watched for a period of several months, and at the end of this time only three could not be found and had presumably died. Two pairs of White-crowned Sparrows have been alive for over a year since operation and have also raised successful broods since then. The use of surgery for sexing birds in studies of nesting behavior, for determining sexual difference in call notes and song, etc., should be of great benefit. Gordon W. Gullion, in his study of sexual behavior and call notes of the American Coot (*Fulica americana*) (unpubl. M. A. thesis, Univ. of Calif., Berkeley, 1950), used the procedure outlined here with considerable success. He used ether as an anesthetic and the percentage of survival was high.—ROBERT E. BAILEY, *Division of Anatomy and Institute of Experimental Biology, University of California, Berkeley, California, March 13, 1952.*

Additional Notes on the Birds of Bimini, Bahamas.—The recent report on the birds of Bimini by Charles Vaurie (1953, *Auk*, 70: 38–48) deals with the summer birds (June–August). A visit in the spring (March 28 to April 18, 1952) has enabled me to make some interesting comparisons.

BREEDING BIRDS

Only few of the breeding birds seem to be permanent residents. Among the latter are the ground dove (*Columbigallina passerina*), the mocking bird (*Mimus polyglottos*), the Bahaman Woodstar (*Calliphlox evelynae*), the grassquit (*Tiaris bicolor*), the Thick-billed Vireo (*Vireo crassirostris*), and the sugarbird (*Coereba flaveola*). Others observed by Vaurie were either not observed at all or only as obvious spring arrivals.

Green Heron (*Butorides virescens*)—During many trips through the mangrove creeks, only a single bird was seen (April 11).

Yellow-crowned Night Heron (*Nyctanassa violacea*)—Not observed.

Clapper Rail (*Rallus longirostris*)—Not once heard.

Bridled Tern (*Sterna anaethetus*), Sooty Tern (*Sterna fuscata*), Least Tern (*Sterna albifrons*), and Common Noddy (*Anous stolidus*).—All four species were absent from their breeding colonies, as well as from the waters around Bimini.

White-crowned Pigeon (*Columba leucocephala*)—Not observed during many visits to their favorite habitats.

Mourning and Zenaida doves (*Zenaida macroura* and *aurita*)—Not observed.

Nighthawk (*Chordeiles minor*)—All calling nighthawks had the call of North American birds. There was no evidence that the native birds had yet arrived.

Gray Kingbird (*Tyrannus dominicensis*)—First seen April 8 (1), recorded also April 9 (1), April 14 (2), April 16 (1). All these birds were completely silent and were either passage migrants on the way to Florida and the Carolinas or recently arrived residents.

Black-whiskered Vireo (*Vireo altiloquus*)—Not found in the tree-groves described by Vaurie.

Red-winged Blackbird (*Agelaius phoeniceus*)—Not seen.

Greater Antillean Bullfinch (*Loxigilla violacea*)—Not seen.

Not all of these birds were necessarily absent from the islands, but a further check of their migratory status is suggested.

To the breeding birds must be added the *Barn Owl (*Tyto alba*). A nest with two young about 3-4 weeks old was found on April 4 in the water tank of the wind-mill of south Bimini. Rabbits were prominent in the food.

MIGRANTS AND WINTER RESIDENTS

*Snowy Egret (*Egretta thula*)—Seen several times, particularly in the mangroves of Easter Cay.

*Sharp-shinned Hawk (*Accipiter velox*)—March 28 (1), March 29 (1), April 17 (1).

*Marsh Hawk (*Circus hudsonius*)—One adult male on April 2. Additional birds seen by other observers on subsequent days.

American Kestrel (*Falco sparverius*)—Not seen.

*Pigeon Hawk (*Falco columbarius*)—Individuals of this species were seen almost daily on all three islands. On one day it was possible to make sure that at least two individuals were involved. However, the total number of birds might have been even larger and probably was. They were beating back and forth, hunting for small birds. Observations were made along the west coast of south Bimini, all along north Bimini to the northernmost tip, and in east Bimini. The species is the dominant hawk on Bimini during this season.

*Upland Plover (*Bartramia longicauda*)—One individual, April 14 and 15 on the lawn of the Lerner Laboratory.

Laughing Gull (*Larus atricilla*)—Present in small numbers throughout my stay. Fourteen were counted April 17.

Royal Tern (*Thalasseus maximus*)—This is the only species of tern identified with certainty during my stay. Up to 20-25 different individuals could be seen in a day in the lagoon and in the waters around the islands.

*Yellow-billed Cuckoo (*Coccyzus americanus*)—One April 15, one April 17. A dead one picked up April 18. No mangrove cuckoos were observed.

Nighthawk (*Chordeiles minor*)—Flight of the North American subspecies on April 15 and April 17. Up to 8 or 9 birds in the air simultaneously.

Belted Kingfisher (*Ceryle alcyon*)—Seen throughout my stay. There were 2 or 3 in the mangroves of Easter Cay.

*Eastern Kingbird (*Tyrannus tyrannus*)—Three seen on Cat Cay (April 6).

Barn Swallow (*Hirundo rustica*)—A flock of these birds was present throughout my stay. They were hawking almost exclusively over the channel between north and south Bimini. I counted 9 birds on April 17. They were apparently roosting in one of the buildings at the edge of the water.

*Prothonotary Warbler (*Protonotaria citrea*)—One watched on April 7 for at least one-half hour, feeding at the beach on the arthropods on a dead fish, in company with 30 Palm Warblers.

*Black-poll Warbler (*Dendroica striata*)—Two, April 16.

*Hooded Warbler (*Wilsonia citrina*)—One, April 7.

*Indigo Bunting (*Passerina cyanea*)—One, April 15.

*Savannah Sparrow (*Passerculus sandwichensis*)—One, March 28.

Three species of warblers were common winter residents. The Palm Warbler

(*Dendroica palmarum*) was by far most common, the Prairie Warbler (*Dendroica discolor*) was next, and the Cape May Warbler (*Dendroica tigrina*) was third. These three species neatly divided the habitat among themselves: The Palm Warblers fed on and near the ground, the Prairie Warblers in bushes and low trees, and the Cape May Warblers in the higher trees. There were very few females among the Cape May Warblers. No Kirtland's Warblers were observed in spite of diligent search.

Birds marked with an asterisk are new records for Bimini. The 13 additions bring the known bird fauna of Bimini to 91 species.

There is much evidence of strong migration in spring. There were many migrants on the islands on April 6 and 7, after a period of more than twenty-four hours of north wind. Again, on April 15, after a western gale had blown throughout the night, there were many birds on the islands, some remaining on the 16th and 17th.—ERNST MAYR, *American Museum of Natural History, New York, N. Y.*