

FURTHER NOTES ON BIRDS OF THE  
LAKE PATZCUARO REGION, MEXICO

BY ERNEST P. EDWARDS AND PAUL S. MARTIN

THIS paper, a supplement to one published by Lea and Edwards (1950) deals primarily with additional information on ecology and distribution. Periods of study were February 18 to March 27, 1948, May 19 to June 9, 1948, and August 26 to 30, 1950. From February 18 to March 27, 1948, the writers were assisted by Roger Hurd; from May 19 to June 8, 1948, they were alone; from August 26 to 30, 1950, Edwards was assisted by Robert B. Lea, Virginia L. Lea, Douglas Lancaster, and Shirley Windnagle, in the absence of Martin.

Four localities not mentioned in the previous report were investigated. The first of these was an old lava flow, at the southwest corner of the lake. The jumbled rocks were still sharp-edged and jagged, and there was no topsoil except in a few of the low places in the flow. The vegetation was sparse, consisting mostly of *Opuntia*, *Rhus toxicodendron*, and a few thorny shrubs. Among the birds, four species were of particular interest. *Chordeiles acutipennis* was present in the spring, single individuals occasionally being flushed from between the rocks. Males of *Eugenes fulgens* were extremely pugnacious there in March, and we often saw a dozen or more in a morning, fighting among themselves. *Contopus virens* apparently was absent in early spring but was common and in breeding condition in late May and June. We occasionally noted one or two *Melanotis caerulescens*.

The second additional locality included the lower slopes of Cerro Ihuátzio on the east side of the lake about 11 kilometers north of the town of Pátzcuaro. The land was deeply cut by erosion, and between the big, rocky gullies only a sparse covering of grass, acacia-like legumes, and a few pines persisted. As was the case at the old lava flow, *Contopus virens* and *Melanotis caerulescens* were breeding there in small numbers. *Camptostoma imberbe* was common in this rather open country. Specimens of *Empidonax albigularis* were unexpectedly taken on the dry hillsides as well as in the willow-grown marsh along the south shore of the lake, and the striking habitat difference was reflected in the great disparity in amount of plumage wear. The marsh birds were fresh and clean in late May and June, while the birds of the open hillsides were very badly worn. The co-types of *Empidonax albigularis axillaris* are much worn while others in a series at the U. S. National Museum, taken at comparable dates, show the same segregation into fresh and worn birds. *Campylorhyn-*

*chus gularis* was a common breeding species in the open country. One nest containing five young was a hollow football-shaped bundle of plant fibers wedged between the stems of an *Opuntia*. We noted an adult female eating a small lizard (*Anolis*), only one end of which could be accommodated by the gizzard, the tail hanging out of the bird's mouth. A rather surprising find in the open country was a nest of *Colaptes cafer* about six feet above ground in the flower stalk of an *Agave*. During the breeding season *Tanagra musica* inhabited the sparsely covered hillsides and probably nested there, but winter flocks were found around forest edges at higher elevation.

The third locality was a long, narrow belt of open pine woodland extending parallel to the highway to Tacámbaro, approximately ten kilometers south of Pátzcuaro. It was a relatively pure stand of pine, with oak trees only along the few gullies which cut through the woodland. A nest of *Sialia mexicana* was situated at the edge of this woodland and was attended by three adults, two males and a female. A female *Loxia curvirostra* taken in the pine woods on February 25 had an enlarged oviduct and well-developed brood patch, while a female *Oriturus superciliosus* taken there on August 30 had ova up to 22 mm. in diameter in the ovary.

The fourth was a rather dry pine and oak woodland with considerable *Arbutus xalapensis* and much undergrowth covering a hillside at the north end of the lake, approximately 11 kilometers west of Quiroga along the highway to Guadalajara. On the west it merged into pure oak woodland and on the north into almost pure pine. The most noteworthy breeding birds in this woodland were *Accipiter cooperii*, *Trogon elegans*, and *Vireo gilvus*. A female *Accipiter cooperii* stooped repeatedly at Edwards on two days in late May and June, and upon being collected proved to have a large brood patch. A few moments after this one was shot, another individual carrying a small mammal flew overhead cackling. A pair of *Accipiter striatus* was seen in the woodland and probably was nesting there.

A nest of *Trogon elegans* was found in a tree-hole which had previously been occupied by an *Otus*, probably *trichopsis*, which was abundant there. The local distribution of *Trogon elegans* was somewhat puzzling. It seemed to completely replace *Trogon mexicanus* in the dry pine-oak woods north of the lake but was absent in the humid pine-oak woods and fir forest, where *Trogon mexicanus* was common.

A nest of *Empidonax difficilis* on a rock ledge in a deep ravine contained two eggs on June 4. We discovered two nests of *Vireo gilvus*, by tracing the males which were singing on the nests. The

nests were composed of a golden-brown downy plant material and were placed 15 and 25 feet above ground, respectively, in *Quercus* and *Arbutus* trees. Transients were abundant in February and March but few individuals bred there.

We found no nests of *Lepidocolaptes leucogaster*, but it was abundant in the dry pine-oak woodland. *Parus wollweberi* and *Melanotis caerulescens* were present in small numbers in May and June, while *Zenaida asiatica* appeared along the woods edge at that time.

South of Pátzcuaro the humid pine-oak woodlands and the fir forest, both studied intensively in previous years, yielded additional items of interest.

*Dendrortyx macroura* was found to occur in both places, usually in pairs, which when surprised would stand motionless a moment before running off through the undergrowth. Its call, heard near dusk in the fir forest, was a clear four-noted whistle, the last three notes sounding much like the call of *Caprimulgus vociferus*.

Another species which was common in both the humid pine-oak woodland and the fir forest was *Campylorhynchus megalopterus*. On May 25 a group was observed constructing what appeared to be a communal nest on a horizontal branch of a fir. The nest, composed of twigs, was approximately 14 inches in diameter and appeared to be open-topped. Two birds were seen carrying sticks to the nest, and at least two other individuals came to the nest to rearrange nesting material. The group of about ten birds remained near the nest for an hour. On one occasion two of them fought, fluttering down to the ground together. On June 2 no activity was noted at the nest.

*Eugenes fulgens* was abundant in the humid pine-oak woods in August, in contrast to its very small numbers there during the rest of the year. *Turdus assimilis* and *Vireolanus melitophrys* were seen there in late spring for the first time. The only individual of the former species noted was singing persistently. Edwards twice had opportunity to watch *Vireolanus* singing in the treetops. It did not move about as it voiced its "whip, whee-oo," the first syllable soft and rasping, and the last two similar to the call of a nearby *Myiarchus tuberculifer*.

In the fir forest one individual each of *Platypsaris aglaiae* (March 5) and *Diglossa baritula* (August 30) was seen and collected.

Considerable emphasis was placed on determining the status of wintering waterfowl. We made two complete circuits of the lake in a motor launch, the first on March 17 and the second on May 31. We traversed portions of the lake also on March 9, 13, and 16. By late May the numbers of ducks had dwindled considerably from the

winter peak, but even as late as the first few days of June flocks of 100 or more of some species were still in evidence, and *Anas clypeata* was more abundant than before.

*Fulica americana* was considerably more abundant and widespread than any other species of waterfowl on the lake, reaching a peak of 1800 individuals in mid-March and dwindling to about 350 in late May.

In March *Anas cyanoptera* and *Mareca americana* appeared to be most abundant of the ducks, the counts reaching approximately 500 individuals each. Somewhat less abundant, in order, were *Aythya affinis*, *Anas acuta*, *Bucephala albeola*, and *Oxyura jamaicensis*, the last two species numbering approximately 100 each. *Anas discors*, *Anas crecca*, *Chaulelasmus streperus*, and *Aythya americana* were represented by less than ten individuals each at that time. Most of the species common in March dwindled sharply in numbers in late spring, but the count of *Chaulelasmus streperus* rose to more than 600 at the end of May, *Oxyura jamaicensis* remained at about 100 individuals, and by the end of the first week in June *Anas clypeata* had moved into the lake in numbers of more than 100. *Podilymbus podiceps* was present in small numbers throughout the winter and spring, and two males taken in June seemed to be in breeding condition.

Other noteworthy species observed at the lake were *Pelecanus erythrorhynchus*, *Phalacrocorax olivaceus*, *Botaurus lentiginosus*, and *Florida caerulea*, the last a first record for Michoacán. A pair of *Nycticorax nycticorax* was nesting in a willow on the south shore of the lake.

The big marsh at the southeast arm of the lake was a scene of much activity in late May and June, with many breeding birds moving in, and still some transients such as *Geothlypis trichas chryseola* passing through. *Cistothorus platensis* proved to be a fairly common breeding bird, and specimens taken appeared to be *C. p. tinnulus* (Moore), formerly known from only one specimen. *Geothlypis speciosa* was breeding there in abundance in late May. By the end of the first week in June males of *Chamaethlypis poliocephala* and *Agelaius phoeniceus* had arrived and commenced to set up territories. At the same time in the fields bordering the marsh *Sturnella magna* was nesting and *Aimophila botterii* was singing persistently on territory.

#### LITERATURE CITED

- LEA, R. B., and E. P. EDWARDS. 1950. Notes on birds of the Lake Patzcuaro region, Michoacan, Mexico. *Condor*, 52: 260-271.
- MOORE, R. T. 1940. Notes on Middle American *Empidonaces*. *Auk*, 57: 349-389.

## SPECIMENS COLLECTED

<i>Podilymbus podiceps podiceps</i> . . . . .	2	<i>Empidonax difficilis occidentalis</i> . . . . .	2
<i>Phalacrocorax olivaceus mexicanus</i> . . . . .	1	<i>Empidonax albigularis axillaris</i> . . . . .	4
<i>Botaurus lentiginosus lentiginosus</i> . . . . .	1	<i>Camptostoma imberbe</i> . . . . .	2
<i>Anas cyanoptera cyanoptera</i> . . . . .	3	<i>Petrochelidon pyrrhonota melanogaster</i> . . . . .	3
<i>Anas discors</i> . . . . .	1	<i>Hirundo rustica erythrogaster</i> . . . . .	6
<i>Anas crecca carolinensis</i> . . . . .	2	<i>Aphelocoma ultramarina ultramarina</i> . . . . .	2
<i>Anas acuta</i> . . . . .	2	<i>Parus wollweberi wollweberi</i> . . . . .	2
<i>Mareca americana</i> . . . . .	2	<i>Sitta carolinensis mexicana</i> . . . . .	2
<i>Chaulelasmus streperus</i> . . . . .	2	<i>Cistothorus platensis tinnulus</i> . . . . .	3
<i>Aythya valisineria</i> . . . . .	2	<i>Campylorhynchus megalopterus</i> . . . . .	11
<i>Aythya americana</i> . . . . .	1	<i>Campylorhynchus gularis</i> . . . . .	5
<i>Aythya affinis</i> . . . . .	1	<i>Troglodytes aedon parkmanii</i> . . . . .	1
* <i>Bucephala albeola</i> . . . . .	1	<i>Troglodytes brunneicollis culequita</i> . . . . .	1
<i>Oxyura jamaicensis rubida</i> . . . . .	1	<i>Troglodytes brunneicollis colimae</i> . . . . .	4
* <i>Accipiter cooperii mexicanus</i> . . . . .	1	<i>Melanotis caerulescens effuticus</i> . . . . .	2
<i>Accipiter striatus suttoni</i> . . . . .	1	<i>Turdus assimilis renominatus</i> . . . . .	1
<i>Buteo jamaicensis calurus</i> . . . . .	1	<i>Myadestes obscurus occidentalis</i> . . . . .	5
<i>Falco sparverius sparverius</i> . . . . .	2	<i>Hylocichla guttata auduboni</i> . . . . .	2
<i>Dendrotyx macroura striatus</i> . . . . .	1	<i>Sialia mexicana australis</i> . . . . .	5
<i>Fulica americana americana</i> . . . . .	1	<i>Regulus calendula calendula</i> . . . . .	1
* <i>Capella gallinago delicata</i> . . . . .	1	<i>Vireolanus meliophrys</i> . . . . .	2
<i>Erolia minutilla</i> . . . . .	4	<i>Vireo gilvus brewsteri</i> . . . . .	2
<i>Himantopus mexicanus</i> . . . . .	1	<i>Diglossa baritula baritula</i> . . . . .	1
<i>Larus delawarensis</i> . . . . .	1	<i>Vermivora ruficapilla ridgwayi</i> . . . . .	1
<i>Zenaidura macroura marginella</i> . . . . .	1	* <i>Dendroica townsendi</i> . . . . .	3
<i>Geococcyx californianus</i> . . . . .	1	<i>Dendroica occidentalis</i> . . . . .	5
<i>Otus trichopsis trichopsis</i> . . . . .	5	<i>Dendroica graciae graciae</i> . . . . .	1
<i>Chordeiles acutipennis texensis</i> . . . . .	1	<i>Oporornis tolmiei</i> . . . . .	2
<i>Caprimulgus vociferus oaxacae</i> . . . . .	2	<i>Geothlypis trichas chryseola</i> . . . . .	1
<i>Colibri thalassinus thalassinus</i> . . . . .	4	<i>Geothlypis speciosa</i> . . . . .	8
<i>Amazilia beryllina viola</i> . . . . .	2	<i>Cardellina rubrifrons</i> . . . . .	3
<i>Eugenes fulgens fulgens</i> . . . . .	3	<i>Setophaga picta picta</i> . . . . .	2
<i>Archilochus colubris</i> . . . . .	1	<i>Cassidix mexicanus mexicanus</i> . . . . .	1
<i>Selasphorus rufus</i> . . . . .	1	* <i>Euphagus cyanocephalus</i> . . . . .	1
<i>Trogon elegans ambiguus</i> . . . . .	1	<i>Icterus bullockii bullockii</i> . . . . .	4
<i>Colaptes cafer mexicanus</i> . . . . .	3	<i>Icterus bullockii parvus</i> . . . . .	1
<i>Melanerpes formicivorus formicivorus</i> . . . . .	2	<i>Icterus wagleri wagleri</i> . . . . .	1
<i>Sphyrapicus varius varius</i> . . . . .	2	<i>Icterus cucullatus cucullatus</i> . . . . .	1
* <i>Sphyrapicus thyroideus nataliae</i> . . . . .	1	<i>Agelaius phoeniceus gubernator</i> . . . . .	8
<i>Dendrocopos villosus jardinii</i> . . . . .	3	<i>Sturnella magna auropectoralis</i> . . . . .	2
<i>Dendrocopos scalaris centrophilus</i> . . . . .	3	<i>Tanagra musica elegantissima</i> . . . . .	3
<i>Lepidocolaptes leucogaster leucogaster</i> . . . . .	6	<i>Tanagra musica rileyi</i> . . . . .	2
* <i>Platypharis aglaiae albiventris</i> . . . . .	1	<i>Carpodacus mexicanus centralis</i> . . . . .	6
<i>Sayornis nigricans nigricans</i> . . . . .	1	<i>Loxia curvirostra stricklandi</i> . . . . .	2
<i>Pyrocephalus rubinus mexicanus</i> . . . . .	1	<i>Oriturus superciliosus superciliosus</i> . . . . .	6
<i>Myiarchus nuttalli inquietus</i> . . . . .	2	* <i>Ammodramus savannarum perpallidus</i> . . . . .	1
<i>Contopus virens placens</i> . . . . .	2	<i>Aimophila ruficeps fusca</i> . . . . .	6
<i>Contopus pertinax pallidiventris</i> . . . . .	1	* <i>Aimophila botterii botterii</i> . . . . .	2
<i>Contopus pertinax pertinax</i> . . . . .	2	<i>Junco phaeonotus australis</i> . . . . .	3
<i>Empidonax minimus</i> . . . . .	1	* <i>Spizella atrogularis atrogularis</i> . . . . .	1
<i>Empidonax hammondi</i> . . . . .	1	<i>Zonotrichia leucophrys leucophrys</i> . . . . .	1
<i>Empidonax wrightii</i> . . . . .	1		
<i>Empidonax affinis pulverius</i> . . . . .	1		

\* First state records for Michoacán.

Box 611, Amherst, Virginia, and Museum of Zoology, University of Michigan, Ann Arbor, Michigan, March 20, 1954.