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### A COLLECTION OF BIRDS FROM THE ARID INTERIOR OF EASTERN GUATEMALA

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FROM July 1958 to April 1959 I conducted a field study in eastern Guatemala. I was accompanied throughout the nine months by my wife Margaret and Larry L. Wolf. Dr. and Mrs. Richard R. Graber joined us in March. We divided our time among the humid Caribbean lowlands (Polo chic Valley and lower Motagua Valley), the highlands (Sierra de las Minas), and the arid interior, the region discussed in this report.

#### THE STUDY AREA

The Motagua Valley and the plains about Salamá, Baja Vera Paz, constitute the arid interior covered by our work. The Río Motagua, Guatemala's longest river, lies south of the Sierra de las Minas and flows east to the Caribbean Sea. The upper part of the valley is the driest area in the country, having less than 25 cm (10 inches) of rainfall per year. Limited precipitation beginning in May initiates a short growing season. After August rain seldom falls, and the vegetation assumes its normal brown. Irrigation eases the farming problems of the natives.

The vegetation, controlled by aridity and sandy soil, consists of opuntias and other cacti plus thorny scrubs of several families, notably Leguminosae. Along the streams a more mesic flora occurs.

The extensive "Plains of Salamá" are ringed by steep ridges. The cities of Salamá and San Jerónimo are located on the level plain at 1,000 meters elevation. In climate the area is similar to the upper Motagua, but in vegetation grasses form the major part of the ground cover.

#### COLLECTING LOCALITIES

We collected specimens and took ecological and behavioral notes at 10 localities, but three fourths of the work was carried out near one station, Usumatlán.

1. *Usumatlán, Zacapa*. 240 meters (800 feet) elevation. Present and



LESSER GROUND-CUCKOO, male, from a tempera painting  
by Don R. Eckelberry.

past farming activities (mostly tomatoes and corn) have created cleared areas and overgrown meadows. The original predominant growth was scrubby woodland. This still occurs in many areas, especially on the south slope of the Sierra de las Minas where it extends up to oak-pine forest at 1,200 meters (4,000 feet) elevation. Along the streams a rich forest furnishes a retreat for many species of birds in the midday heat. A limited shore bird habitat is available. Specimens were taken at Usumatlán during the following periods: 9 to 19 July, 12 to 25 August, 12 September, 25 to 28 September, 22 to 28 November, 2 March, 9 March, 29 March to 3 April.

2. *Quirigua, Izabal*. 120 to 240 meters (400 to 800 feet). West of the tropical village of Quirigua the oak-pine forest characteristic of the highlands extends down the south slope of the Sierra de las Minas into the Motagua Valley. Here it forms the transition between the scrubby, arid upper Motagua and the rain forests of the Caribbean lowlands. In the valley the pines are small, and very widely spaced, dense scrub predominating. Collecting dates: 6 January, 15 March.

3. *Santiago, Zacapa*. 180 meters (600 feet). Several kilometers west of Quirigua the Motagua Valley takes on the almost desertlike aspect found along most of its length. Collecting date: 22 September.

4. *Zacapa, Zacapa*. 240 meters (800 feet). The Motagua Valley widens here, forming a plain 16 km across. Collecting date: 7 July.

5. *Teculután, Zacapa*. 240 meters (800 feet). This station is one of the larger towns along the new "Route to the Atlantic," a paved road from Guatemala City to Puerto Barrios, the major Caribbean port. Residents of Teculután call their village the tomato capital of Guatemala. Water for continuous fruit farming is furnished by the Teculután River, which flows from a deep valley in the heart of the Sierra de las Minas. The vegetation of the area is scrubby woodland and farmland. Collecting dates: 27 September, 11 March.

6. *El Rancho, Zacapa*. 300 meters (1,000 feet). The countryside is similar to the rest of the valley. Collecting date: 28 September.

7. *El Progreso, Guatemala*. 760 meters (2,300 feet). An important area in the ornithological history of the arid interior. The vegetation is arid, but not as arid as at El Rancho or Morazán. Collecting date: 24 July.

8. *Morazán, Baja Vera Paz*. 400 meters (1,200 feet). Located in a side valley north of the Motagua, this is the driest part of the study area. Collecting dates: 29 September, 14 November, 10 January.

9. *San Jerónimo, Baja Vera Paz*. 1,000 meters (3,000 feet). Irrigated fields and scrubby grassland surround this village at the southern edge of the Plains of Salamá. Collecting date: 10 January.

10. *Salamá, Baja Vera Paz*. 1,000 meters (3,000 feet). A small city centered in the arid plains. Collecting dates: 24 February, 26 March.

#### PREVIOUS COLLECTING

Specimens were taken in the arid interior of Guatemala prior to 1850, but the first work of any consequence was initiated by Osbert Salvin (joined later by F. D. Godman) in 1857. Since the Motagua Valley was on the main route used in entering or leaving the country from the east, the birds of the arid interior received considerable attention. The results of this work, which was continued for 40 years by professional collectors, are recorded in the *Biologia Centrali-Americana* (Salvin and Godman, 1879, 1888, and 1897).

In 1906 Ned Dearborn collected at El Rancho, and in 1915 Rhoads and Poole worked at Quirigua and Gualán. A. W. Anthony began five years of collecting in Guatemala in 1924; in the Motagua Valley he took specimens at Quirigua and El Progreso. Griscom (1932) summarized all of these studies. Tashian (1953), in an expedition to southeastern Guatemala, collected in the Motagua Valley near Teculután. These early investigators listed the following 24 species that were not collected by us. Species names follow Eisenmann (1955), except for those included in the A.O.U. *Check-list*.

- Mareca americana*. Baldpate. San Jerónimo.
- Buteo albicaudatus*. White-tailed Hawk. San Jerónimo, El Progreso.
- Hypomorphnus urubitinga*. Great Black Hawk. San Jerónimo.
- Harpyhaliaetus solitarius*. Solitary Eagle. San Jerónimo.
- Circus cyaneus*. Marsh Hawk. San Jerónimo.
- Numenius borealis*. Eskimo Curlew. San Jerónimo (now extinct).
- Limnodromus griseus*. Common Dowitcher. San Jerónimo.
- Erolia minutilla*. Least Sandpiper. Near Quirigua.
- Burhinus bistriatus*. Double-striped Thick-knee. San Jerónimo.
- Speotyto cunicularia*. Burrowing Owl. San Jerónimo, Gualán, El Rancho.
- Panyptila sancti-hieronymi*. Great Swallow-tailed Swift. San Jerónimo.
- Muscivora tyrannus*. Fork-tailed Flycatcher. San Jerónimo.
- Tyrannus vociferans*. Cassin's Kingbird. Salamá.
- Myiarchus cinerascens*. Ash-throated Flycatcher. Morazán, El Rancho.
- Myiarchus nuttingi*. Nutting's Flycatcher. El Rancho, El Progreso.
- Empidonax virescens*. Acadian Flycatcher. Near San Jerónimo.
- Camptostoma imberbe*. Beardless Flycatcher. El Progreso.
- Iridoprocne bicolor*. Tree Swallow. San Jerónimo.
- Thryothorus pleurostictus*. Banded Wren. Gualán.
- Salpinctes obsoletus*. Rock Wren. Salamá.
- Vireo flavoviridis*. Yellow-green Vireo. El Progreso.
- Parula americana*. Parula Warbler. Gualán.
- Dendroica coronata*. Myrtle Warbler. San Jerónimo, near Quirigua.
- Pheucticus chrysopheplus*. Yellow Grosbeak. El Rancho, El Progreso.

The abundance of good records from San Jerónimo is due to the efforts of Robert Owen, who worked under Salvin and Godman. Many of his specimens were probably collected in the highlands, but since no elevations were indicated, I include them all here.

#### DISCUSSION

Twenty-four transient species were recorded by this expedition in the arid interior. Only one of these, *Vireo bellii*, was not found also in the adjacent highlands or humid lowlands. Seventy-five resident forms were noted. Over half of these resident birds (43 species) were recorded outside of the arid interior as well.

A total of 123 species (24 by previous workers) has been reported from the arid interior of eastern Guatemala. In the adjacent Caribbean lowlands over 300 species have been recorded. This list is restricted to material obtained by our expedition. No attempt is made to include information obtained, or to list specimens collected, on previous expeditions to eastern Guatemala. Localities in italics are those where specimens were taken; others indicate sight records only.

*Butorides virescens*. Green Heron. Usumatlán. Up to 1,600 meters (5,000 feet). Recorded in late November.

*Florida caerulea*. Little Blue Heron. Quirigua. Up to 260 meters (800 feet). Two were seen on the Motagua River on 11 March.

*Mycteria americana*. Wood Ibis. Zacapa. Up to 260 meters (800 feet). A group of six was seen along the Motagua River on 8 July.

*Ajaia ajaja*. Roseate Spoonbill. Zacapa. 200 meters. A flock of five was seen with the Wood Ibis mentioned above.

*Sarcoramphus papa*. King Vulture. Usumatlán. Up to 2,700 meters (8,300 feet). Recorded occasionally.

*Coragyps atratus*. Black Vulture. Usumatlán, Salamá. Up to 1,900 meters (5,900 feet). Fairly numerous.

*Cathartes aura aura*. Turkey Vulture. Usumatlán, Salamá, San Jerónimo. Up to 2,600 meters (8,000 feet). Virtually ubiquitous. More common than *Coragyps atratus*. One male (collected 24 August, wing length 498 mm, tail 255 mm).

*Buteo jamaicensis*. Red-tailed Hawk. Morazán, Teculután. Up to 3,100 meters (9,500 feet). Recorded 14 November and 25 December; more common in the highlands.

*Buteo magnirostris*. Roadside Hawk. Usumatlán. Up to 260 meters (800 feet). Fairly common resident in open or cultivated areas.

*Buteo nitidus micrus*. Gray Hawk. Usumatlán, Quirigua. Up to 260 meters (800 feet). Less common than *Buteo magnirostris*. One female (collected 11 July, wing length 259 mm, tail molting, culmen 23 mm).

*Buteogallus anthracinus*. Common Black Hawk. Usumatlán. Up to 260 meters (800 feet). Uncommon resident. One female (12 August).

*Herpetotheres cachinnans chapmani*. Laughing Falcon. Usumatlán. Up to 260 meters (800 feet). Resident in open woodland and cultivated areas. Possibly the most conspicuous hawk in the arid interior. One female (18 August, enlarged ovary).

*Polyborus cheriway*. Caracara. Usumatlán, Zacapa, Teculután. Up to 260 meters (800 feet). Fairly common in the upper Motagua valley in open scrubby areas.

*Falco sparverius sparverius*. American Sparrow Hawk. *Zacapa, Usumatlán*. Up to 1,600 meters (4,800 feet) (including the race *F. S. tropicalis* collected in the adjacent highlands). Abundant in winter. On 11 March, while driving from Teculután to Quirigua, we saw an average of almost two birds per kilometer (40 birds in 70 km). Two females.

*Colinus leucopogon*. Spot-bellied Bobwhite. *Usumatlán, Teculután, El Rancho*. Up to 260 meters (800 feet). Fairly common resident. We saw a female with several chicks in an overgrown field on 12 August. A young bird was collected on 21 August and an adult female from a covey of 15 on 11 March. Two females.

*Charadrius collaris*. Collared Plover. *Usumatlán*. 260 meters (800 feet). On 23 August I collected a single bird, which flushed from a small muddy pond and lit nearby on bare ground. One male.

*Tringa solitaria cinnamomea*. Solitary Sandpiper. *Usumatlán*. 260 meters (800 feet). One male (23 August, wing length 131 mm, tail 59 mm).

*Actitis macularia*. Spotted Sandpiper. *Usumatlán, Salamá*. Up to 260 meters (800 feet). Common in winter. The earliest autumn record was on 18 August. Spotted birds were taken in August and on 25 November, birds without spotted breasts on 30 September and 26 November. Two males, three females, one ?.

*Columba livia*. Rock Dove. *Teculután*. Up to 1,900 meters (5,800 feet). We recorded a few groups of white or largely white semiferall birds. No populations were found established in the wild.

*Zenaidura macroura marginella*. Mourning Dove. *Usumatlán*. Up to 2,150 meters (6,600 feet). Uncommon in winter in scrubby open woodland, more common in spring. One male (22 November).

*Zenaida asiatica asiatica*. White-winged Dove. *Usumatlán, El Rancho, Teculután, Morazán, San Jerónimo*. Up to 1,600 meters (5,100 feet). Abundant resident. Specimens taken in late August were molting while birds from October and November were generally in fresh plumage. Two males, three females, one ?.

*Scardafella inca*. Inca Dove. *Usumatlán, Teculután, El Rancho, Morazán, San Jerónimo, Quirigua*. Up to 1,300 meters (4,000 feet). Abundant. A nest containing two eggs was found on 9 July. A male taken 19 July had enlarged testes. Three males.

*Columbigallina passerina pallescens*. Common Ground-Dove. *Usumatlán, Teculután, El Rancho, Morazán, Salamá, Quirigua*. Up to 1,500 meters (4,500 feet). Common in open areas. A nest was found on 12 September 1.6 meters above the ground in a thorny tree. It contained two well-developed young. A pair with enlarged gonads (one ovum 5 mm in length) was taken 2 March. One male, one female, one ?.

*Leptotila verreauxi fulviventris*. White-fronted Dove. *Usumatlán*. Up to 260 meters (800 feet). Uncommon resident in woodland along streams. A male collected 20 August was molting heavily. One male, one female.

*Aratinga holochlora strenua*. Green Parakeet. *Progreso, Usumatlán*. Up to 750 meters (2,300 feet). Uncommon in summer in cultivated areas and scrubby woodland. All of the specimens were collected in July and August. Four males, one female.

*Amazona albifrons nana*. White-fronted Parrot. *Usumatlán*. Up to 330 meters (1,000 feet). During July and August flocks of up to 20 birds were seen daily flying into the foothills of the Sierra de las Minas in the morning and returning at dusk to the woods along the river. A molting male was collected on 23 August. Neither this species nor *Aratinga holochlora* was seen during the dry winter months. Four males.

*Piaya cayana thermophila*. Squirrel Cuckoo. *Usumatlán, Morazán*. Up to 2,100 meters (6,300 feet). Fairly common in all types of woodland. One male, one female.

*Crotophaga sulcirostris sulcirostris*. Groove-billed Ani. *Usumatlán, San Jerónimo,*

Teculután, Quirigua, Morazán. Up to 1,600 meters (5,000 feet). Abundant and conspicuous in brushy fields. Molting specimens were taken from 12 August to 24 November. A stub-tailed juvenile female was collected on 20 August. Three males, five females.

*Morococcyx erythropygus erythropygus*. Lesser Ground-Cuckoo. *Usumatlán, Morazán*. Up to 400 meters (1,200 feet). We collected a specimen on 17 August and one on 29 September. *M. e. macrourus* Griscom, described from the Motagua Valley, is said to be paler and longer tailed than the nominate form. My two specimens are not paler than examples of the nominate race available for comparison, and their tail length (133 and 134 mm) is below that given by Griscom (1930) for either male or female *macrourus*. Two ?.

*Geococcyx velox affinis*. Lesser Roadrunner. *Salamá, Usumatlán, Morazán*. Up to 1,000 meters (3,000 feet). Uncommon resident in open areas. The ovary of a female taken 26 March was slightly enlarged. Two females.

*Tyto alba*. Barn Owl. *Usumatlán*. 260 meters (800 feet). We saw one on 15 July. *Bubo virginianus*. Great Horned Owl. *Usumatlán*. 260 meters (800 feet). Uncommon in scrubby woodland.

*Glaucidium brasilianum ridgwayi*. Ferruginous Pygmy-Owl. *Usumatlán, Morazán, Quirigua*. Up to 1,180 meters (3,500 feet). Common in woodland. Specimens taken in late August and September were molting. Two males, one female.

*Chordeiles acutipennis micromeris*. Lesser Nighthawk. *Usumatlán*. 260 meters (800 feet). We collected a single specimen 22 August on a rocky hillside. It measures: wing 156 mm, tail 98 mm. One male.

*Nyctidromus albicollis albicollis*. Pauraque. *El Rancho, Usumatlán*. Up to 1,900 meters (5,700 feet). Common; heard calling throughout the year. Two males, one female.

*Caprimulgus ridgwayi troglodytes*. Buff-collared Nightjar. *Usumatlán*. 260 meters (800 feet). Specimens were taken on 13 July and 22 August on a rocky hillside covered with scrubby vegetation. Both birds were molting. One male (wing length 143 mm), one female (wing length 152 mm).

*Streptoprocne zonaris mexicana*. White-collared Swift. *Zacapa*. Up to 2,000 meters (6,100 feet). Two specimens were taken from a flock of birds seen at 160 meters (500 feet) elevation on 22 September. The male specimen was molting its remiges. One male, one ?.

*Chaetura vauxi richmondi*. Vaux's Swift. *Usumatlán*. 260 meters (800 feet). One specimen was taken 28 September from a flock of 40 or more swifts. The bird's skull was not ossified. A female *Cypseloides rutilus* was taken from the same flock. One female.

*Cypseloides rutilus brunneitorques*. Chestnut-collared Swift. *Usumatlán*. 260 meters (800 feet). Seen occasionally in flocks of 10 to 20 during late summer. The latest observation was 28 September. A male collected 12 July had enlarged testes. One male, one female.

*Chlorostilbon canivetii osberti*. Fork-tailed Emerald. *Usumatlán*. 260 meters (800 feet). Recorded on 11 March. One ?.

*Amazilia rutila rutila*. Cinnamon Hummingbird. *Usumatlán, Quirigua*. Up to 260 meters (800 feet). Uncommon resident in scrubby woodland. Four males.

*Heliomaster constanti leocadiae*. Plain-capped Starthroat. *Usumatlán*. 260 meters (800 feet). Larry Wolf collected a male in an arid meadow on 23 November. One male.

*Trogon elegans elegans*. Elegant Trogon. *Usumatlán*. 260 meters (800 feet). Un-

common resident in scrubby woodland. On 9 July we noted a female carrying food into a hole five meters up in a six-meter dead stub. A male was nearby. A female taken 29 August was molting in the body. Two females.

*Chloroceryle americana septentrionalis*. Green Kingfisher. *Usumatlán*. Up to 1,600 meters (5,000 feet). Uncommon resident. One female.

*Eumomota superciliosa vanrossemi*. Turquoise-browed Motmot. *Usumatlán*. 260 meters (800 feet). Fairly common in scrubby woodland. Two molting specimens were collected in late August. In March birds were seen flying to and from nesting holes in sandy embankments and road cuts. Three males, one female.

*Momotus mexicanus castaneiceps*. Russet-crowned Motmot. *Usumatlán, Morazán, El Rancho*. Up to 390 meters (1,200 feet). Common in woodland. Nesting activity was observed in March. Molting specimens were taken from 19 August to 29 November. Two males, four females.

*Dryocopus lineatus similis*. Lineated Woodpecker. *Usumatlán*. Up to 1,050 meters (3,200 feet). Fairly common. A pair collected on 9 July was molting. One male, one female.

*Melanerpes formicivorus*. Acorn Woodpecker. *Quirigua*. Up to 3,000 meters (9,000 feet). Recorded in March in open pine woodland at 200 meters (600 feet).

*Centurus aurifrons santacruzi*. Golden-fronted Woodpecker. *Usumatlán, Salamá*. Up to 1,100 meters (3,300 feet). Abundant in second-growth and open woodland. The specimens measure: seven males, wing, 129 to 140 mm (134.8); tail, 70 to 81 mm (77.3); one female, wing 128 mm, tail 71 mm. Seven males, one female.

*Tityra semifasciata personata*. Masked Tityra. *Usumatlán, San Jerónimo*. Up to 2,100 meters (6,400 feet). Seen in small flocks in late summer in the Motagua Valley. A specimen with enlarged testes was collected on 19 August. A molting bird was taken two days later. We took another molting specimen at San Jerónimo on 14 November. Three males, one ?.

*Muscivora forficata*. Scissor-tailed Flycatcher. *Zacapa, Usumatlán*. Up to 260 meters (800 feet). Uncommon transient and rare winter visitor.

*Tyrannus verticalis*. Western Kingbird. *Morazán, Usumatlán*. Up to 800 meters (2,400 feet). Specimens were taken on 14 November (molting) and 25 November. Two females.

*Tyrannus melancholicus chloronotus*. Tropical Kingbird. *Usumatlán, Quirigua, Teculután, Morazán, San Jerónimo*. Up to 1,600 meters (5,000 feet). Fairly common and conspicuous resident. One male, one ?.

*Myiodynastes luteiventris luteiventris*. Sulphur-bellied Flycatcher. *Usumatlán, Teculután*. Up to 260 meters (800 feet). Recorded in July and September. A specimen with enlarged testes was taken 10 July. Two males, one ?.

*Megarynchus pitangua mexicanus*. Boat-billed Flycatcher. *Usumatlán, San Jerónimo, Quirigua*. Up to 800 meters (2,400 feet). Fairly common in woodland. Specimens collected from 22 August to 23 November were molting. My specimens are much darker below and more olive above than *M. p. deserticola* Griscom. This race is listed by Griscom (1932) as occurring throughout the arid interior of Guatemala but is probably limited to the Rio Negro Valley in the central part of the country. One male, two females.

*Pitangus sulphuratus guatemalensis*. Great Kiskadee. *Usumatlán, Quirigua, Morazán*. Up to 650 meters (2,000 feet). Common and conspicuous in farmland and second growth. A male collected 11 July had enlarged testes. Three males, one female.

*Myiarchus crinitus boreus*. Great Crested Flycatcher. *Usumatlán, Morazán*. Up to 430 meters (1,300 feet). Transient and winter visitor. Three males, one female.



*Myiarchus tyrannulus cooperi*. Wied's Crested Flycatcher. *Usumatlán*. 260 meters (800 feet). One female (26 November).

*Contopus sordidulus veliei*. Western Wood Pewee. *Usumatlán*. Up to 2,400 meters (8,700 feet). One male (18 August).

*Empidonax minimus*. Least Flycatcher. *Usumatlán, Morazán, San Jerónimo, Quirigua*. Up to 800 meters (2,400 feet). Abundant in winter. The first autumn record was on 18 August. Molting birds were taken from 25 August to 20 October. Eight males, six females, two ?.

*Tolmomyias sulphureus cinereiceps*. Yellow-olive Flycatcher. *Usumatlán*. Up to 1,200 meters (3,600 feet). One male (25 November), one female (2 March).

*Petrochelidon pyrrhonota pyrrhonota*. Cliff Swallow. *Usumatlán, Morazán*. Up to 400 meters (1,200 feet). Mixed flocks of up to 75 migrating swallows, about half of them Barn Swallows (*Hirundo rustica*), the remainder mostly Cliff Swallows, were seen in late September. The skulls of several specimens taken from these flocks were not ossified. Four males, two females.

*Hirundo rustica erythrogaster*. Barn Swallow. *Usumatlán, Teculután*. Up to 330 meters (1,000 feet). Fairly common in late September. One was seen 2 March. One male.

*Tachycineta thalassina lepida*. Violet-green Swallow. *Usumatlán, Morazán, El Rancho*. Up to 1,900 meters (5,900 feet). Common in winter. Usually seen in flocks of up to 50 individuals. One male, two females.

*Corvus corax*. Common Raven. *Usumatlán*. Up to 1,150 meters (3,500 feet). Seen occasionally in flight on the arid south slope of the Sierra de las Minas.

*Calocitta formosa pompata*. Magpie Jay. *Usumatlán, Morazán, Quirigua*. Up to 500 meters (1,500 feet). Fairly common resident in scrubby woodland. Specimens taken 12 July and 17 August were immature; the rectrices of the latter were molting. Three males, one ?.

*Cissilopha melanocyanea melanocyanea*. Bushy-crested Jay. *Usumatlán, Salamá*. 500, to 2,100 meters (1,500 to 6,500 feet). One male (24 December).

*Campylorhynchus rufinucha castaneum*. Rufous-naped Wren. *Usumatlán, Morazán*. Up to 1,100 meters (3,300 feet). Fairly common resident in brush, scrubby meadows, and hedge rows. A male and female taken in mid-August had enlarged gonads. Molting specimens were collected in August and November. Five males, one female.

*Troglodytes musculus*. Southern House Wren. *Quirigua*. Up to 3,100 meters (9,300 feet). Several were heard singing in brush in pine-oak woodland in March.

*Mimus gilvus gracilis*. Tropical Mockingbird. *Usumatlán, Salamá, Morazán*. Up to 900 meters (2,800 feet). Uncommon resident in arid meadows and scrubby woodland. One male, two females.

*Turdus grayi grayi*. Clay-colored Robin. *Usumatlán, San Jerónimo, Quirigua, Morazán*. Up to 1,000 meters (3,000 feet). Common in wooded areas along streams. Juveniles with spotted breasts were taken on 12 August and 17 August. Molting specimens were collected in October. Four males, five females, one ?.

*Poliophtila albiloris albiloris*. White-lored Gnatcatcher. *Usumatlán, Morazán*. Up to 400 meters (1,200 feet). Fairly common resident in scrubby woodland. Males with enlarged testes were taken on 11 March and 19 August. Four males, two females, one ?.

*Vireo bellii bellii*. Bell's Vireo. *Usumatlán*. 260 meters (800 feet). Collected in second growth in November and March. One male, two females.

*Vireo solitarius solitarius*. Solitary Vireo. *Usumatlán*. Up to 2,300 meters (7,000 feet). Fairly common in winter. One female.

*Vireo gilvus gilvus*. Warbling Vireo. *Usumatlán*. Up to 2,400 meters (7,300 feet). One female (25 November).

*Mniotilta varia*. Black-and-white Warbler. *Usumatlán*. Up to 2,400 meters (7,300 feet). One female (22 August).

*Dendroica petechia aestiva*. Yellow Warbler. *Usumatlán*. Up to 1,000 meters (3,000 feet). Common in winter. Five males, one ?.

*Dendroica magnolia*. Magnolia Warbler. *Usumatlán*, *Quirigua*. Up to 1,500 meters (4,600 feet). Fairly common in winter. Two males.

*Dendroica townsendi*. Townsend's Warbler. *Morazán*. Up to 3,100 meters (9,300 feet). One male (29 September).

*Oporornis tolmiei*. MacGillivray's Warbler. *San Jerónimo*. 650 to 2,900 meters (2,000 to 8,000 feet). One male (14 November).

*Chamaethlypis poliocephala caninucha*. Ground Chat. *Usumatlán*. Up to 750 meters (2,300 feet). One male (28 November).

*Icteria virens virens*. Yellow-breasted Chat. *Usumatlán*. Up to 600 meters (1,800 feet). One ? (26 November).

*Tangavius aeneus aeneus*. Bronzed Cowbird. *Usumatlán*. Up to 260 meters (800 feet). Uncommon. A male with enlarged testes was collected on 13 July. An immature male was taken 22 August. Two males.

*Cassidix mexicanus mexicanus*. Boat-tailed Grackle. *Usumatlán*, *Teculután*. Up to 1,600 meters (4,800 feet). Fairly common; seen often in villages and cultivated areas. A molting immature male was taken 24 August. One male, one female.

*Icterus pectoralis*. Spotted-breasted Oriole. *Usumatlán*. 1,000 meters (3,000 feet). One was seen on 3 March in a small grove of trees.

*Icterus gularis xerophilus*. Black-throated Oriole. *Usumatlán*, *Teculután*. 260 meters (800 feet). Fairly common resident in arid woodlands and along streams. The specimens measure: male, wing 125 mm, tail 113; female, wing 121 to 126 (123); tail 100 to 113 (105.2). One male, four females.

*Icterus sclateri alticola*. Streak-backed Oriole. *Usumatlán*. Up to 300 meters (900 feet). Common resident in arid woodlands and meadows. Molting specimens were obtained in August and September. Five males, four females.

*Sturnella magna alticola*. Common Meadowlark. *Salamá*. 1,000 meters (3,000 feet). A loose flock of eight to 10 meadowlarks, from which one specimen was taken, was seen 26 March moving northeast across the Plains of Salamá in company with large numbers of Blue Grosbeaks (*Guiraca caerulea*). One female.

*Tanagra elegantissima*. Blue-hooded Euphonia. *Usumatlán*. 260 meters (800 feet). Several were seen in scrubby woodland along a stream on 11 March.

*Piranga rubra rubra*. Summer Tanager. *Usumatlán*, *Quirigua*. Up to 3,100 meters (6,300 feet). Uncommon in winter. One female.

*Piranga flava figlina*. Hepatic Tanager. *Usumatlán*. 1,150 meters (3,500 feet). A specimen was taken in dry open woodland on 3 March. Three or four others were seen nearby. One male (wing length 96 mm, tail 80 mm).

*Phœticus ludovicianus*. Rose-breasted Grosbeak. *Morazán*, *Usumatlán*. Up to 2,300 meters (7,000 feet). Uncommon. One female (10 January).

*Guiraca caerulea chiapensis*. Blue Grosbeak. *Usumatlán*, *Salamá*. Up to 1,000 meters (3,000 feet). Resident in overgrown fields. On 26 March a scattered flock of several dozen (race not determined) moved northeast across the Plains of Salamá in company with other migrants.

According to Storer and Zimmerman (1959) the races *Guiraca caerulea chiapensis* and *G. c. lazula* inhabit areas to the north and south of Guatemala, respectively. The

only Guatemalan specimens listed by these workers were considered "probably intermediate" between the two races. In my series of four birds the only male, an adult taken 20 August (wing length 95 mm, tail 74, culmen 14.5), is not as bright as *G. c. lazula* and seems closer to *G. c. chiapensis*. One male, three females.

*Passerina cyanea*. Indigo Bunting. *Usumatlán, San Jerónimo*. Up to 2,000 meters (6,000 feet). Abundant winter resident in brushy meadows and second growth. Three males, one female, 2 ?.

*Passerina versicolor purpurascens*. Varied Bunting. *Usumatlán*. 260 meters (800 feet). Recorded in July and September in scrubby, open woodland. Males were singing on territory in July. A female taken 19 July had an enlarged ovary. We collected a molting male 12 September. Two males, two females.

*Sporophila torqueola moreletii*. White-collared Seedeater. *Usumatlán*. Up to 1,900 meters (5,900 feet). Abundant resident in brushy meadows. Two males, one female.

*Volatinia jacarina splendens*. Blue-black Grassquit. *Zacapa*. Up to 2,000 meters (6,000 feet). One male (6 January).

*Spinus psaltria colombianus*. Lesser Goldfinch. *Usumatlán*. Up to 1,600 meters (5,000 feet). A few small flocks were seen in overgrown fields during July and August. Three males, two ?.

*Aimophila ruficauda connectens*. Stripe-headed Sparrow. *Usumatlán, Morazán*. Up to 300 meters (900 feet). Common in overgrown fields and hedge rows. Specimens taken in July and November had enlarged gonads. Four males, one female, one ?.

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#### SUMMARY

In a field study of the avifauna of the arid interior of eastern Guatemala, 75 resident and 24 migratory species were recorded. Ten stations were utilized, but most of the collecting of specimens and recording of data was done near Usumatlán. A total of 123 species is known from this region (24 reported on previous expeditions), indicating that in number of species this avifauna is one of the sparest in Central America.

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