

A COLLECTION OF BIRDS FROM THE SIERRA DE LAS MINAS, GUATEMALA

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FROM 7 July 1958 to 3 April 1959, I conducted a field study of the birds in the Sierra de las Minas and adjacent valleys in eastern Guatemala. I was assisted throughout this period by my wife Margaret and by Larry L. Wolf, and in March by Dr. and Mrs. Richard R. Graber.

The activities of the expedition included collecting specimens and gathering data on ecology, nesting, and behavior. The study area included parts of the departments of Zacapa, Izabal, Alta Vera Paz, and Baja Vera Paz. In the Sierra de las Minas above 3,500 feet elevation, the region covered in this paper, we listed 123 resident and 37 migratory species. Our studies in the humid lowlands north of the Sierra de las Minas (Polochic Valley) and the arid interior to the south (Motagua Valley) will be discussed in future reports.

Eighty miles long, 20 miles wide, and rising almost 2 miles above sea level, the "Mountain of the Mines" extends from San Jerónimo and Tactic in the Vera Paz highlands east to the village of Izabal. Just south of this lowland village it merges with the Sierra del Mico (a minor range reaching eastward 40 more miles before dipping into the Caribbean Sea).

Within the last six years two lumber roads were bulldozed up the south slope to elevations of about 7,000 feet. The present effect of lumbering operations on the pine forests is minor and local. Sporadic farming has been more important in destroying the original vegetation. However, virgin forest, or at least mature growth, still occurs throughout most of the mountains.

On the north slope of the range only a few foot trails exist. The best of these connects Río Hondo in the Motagua Valley to Zarco in the Polochic.

Geologically the Sierra de las Minas is made up of Paleozoic and Mesozoic deposits. Along with the Chiapas highlands and the *altos* of western Guatemala, this area formed a refuge for terrestrial life during the early Tertiary when other parts of Central America were inundated. The higher parts of the range have been available to vegetation since the end of the Cretaceous. As might be expected, many ancient forms of life persist here.

Daily temperatures vary with elevation from 100 F in the foothills to 50 F or lower on the ridges; there is little seasonal change. The northeast trade winds, which sweep in from the Caribbean continuously, annually deposit as much as 200 inches of rain on the windward side of the mountains. Rainfall is much reduced on the leeward slopes, especially at lower elevations.

Five collecting stations were utilized in the highlands. Because of the

paucity of villages above 3,500 feet, several of the localities are identified with the name of a nearby lowland town.

Most of the field work was done on the south slope of the Minas above Usumatlán. At this locality we were able to climb to 9,400 feet, the highest peak in the immediate area. The visible ridges appear to be forested with pine. There is no alpine tundra in eastern Guatemala.

The other four collecting stations, all situated along the highway leading around the west end of the Sierra de las Minas, were utilized occasionally.

HIGHLAND COLLECTING STATIONS

(1) *Usumatlán*. Field work on the south slope of the Minas above Usumatlán was carried on during the following periods: 27 July to 7 August, 26 August to 9 September, 28 November to 24 December, 3 to 8 March.

Four major habitats occur at elevations from 4,000 feet to 9,400 feet: heavy brush, the direct result of recent farming and lumbering operations, extends from 4,500 to 6,500 feet; oak-pine, a brushy woodland covering much of the south slope of the mountains in the rain shadow of the higher ridges, is scattered from 4,000 to 8,000 feet; cloud forest is found on a nearly level shelf sloping from 6,400 to 7,000 feet, where poor drainage keeps the soil sufficiently moist to support a luxuriant growth; and, finally, a magnificent pine forest with a grassy understory forms a "park" on top of the Sierra de las Minas from 8,000 to 9,400 feet.

(2) *San Jerónimo*. The well-drained slopes of the ridge just south of San Jerónimo supports a pine forest; the top itself is more moist, and deciduous trees including oaks, sweet gum, and maples dominate.

Collecting was carried on from 3,500 to 5,000 feet on 29 September, 14 November, and 10 January.

(3) *Salamá*. The high terrain north of Salamá, the capital of the department of Baja Vera Paz, is covered by an extensive pine woodland from 4,500 to 6,500 feet.

Specimens were taken in this area on 30 September, 13 November, 11 January, 24 February, and 27 March.

(4) *Purulhá*. Field work was done in a narrow valley, the floor of which is nearly covered by a marsh several miles long. Two habitats received attention, the marsh and the brushy hillsides, both at 5,000 feet.

Collecting dates were 30 September, 13 November, 11 January, 24 February, and 27 March.

(5) *Tactic*. Only a few records were made near Tactic, mostly in humid forest from 4,800 to 5,000 feet.

Specimens were taken on 11 January and 24 February.

The only part of the year not covered by this study is the late spring and early summer. The number of observer-days (days in the field multiplied by the number in the party) totaled 241.

PREVIOUS COLLECTING

In July 1897, W. B. Richardson did some collecting in the Sierra de las Minas. Richardson's list, published by Griscom (1935), included 114 species, all from the broad locality "Sierra de las Minas," but including records from

TABLE 1
NUMBERS OF RESIDENT SPECIES BY FAMILY AND OF SPECIES LIMITED TO THE HIGHLANDS

Family	Resident Species	Highland Species	Family	Resident Species	Highland Species
Ardeidae	1	0	Dendrocolaptidae	4	3
Cathartidae	3	0	Furnariidae	2	1
Accipitridae	2	1	Formicariidae	1	0
Falconidae	1	0	Cotingidae	1	0
Cracidae	2	1	Tyrannidae	12	6
Phasianidae	2	2	Hirundinidae	1	1
Rallidae	1	0	Corvidae	4	3
Columbidae	4	1	Certhiidae	1	1
Psittacidae	2	1	Troglodytidae	5	2
Cuculidae	2	0	Mimidae	1	1
Strigidae	2	1	Turdidae	8	8
Caprimulgidae	2	0	Ptilonotidae	1	1
Apodidae	2	1	Cyralrhidae	1	1
Trochilidae	12	10	Vireonidae	3	3
Trogonidae	3	2	Coerebidae	2	1
Alcedinidae	1	0	Parulidae	9	7
Momotidae	1	1	Icteridae	4	2
Ramphastidae	1	0	Thraupidae	2	2
Picidae	6	2	Fringillidae	11	6

the Motagua and Polochic Valleys. Griscom attempted to place each bird on the north or south slope of the mountain, or in the high country, on the basis of known habitat requirements of the species. In his list for the arid tropics (south slope of the Sierra and the Motagua Valley), he included the Plain Wren (*Thryothorus modestus*) and the Yellow-winged Tanager (*Thraupis abbas*), which we found common in the humid tropics north of the Minas and completely lacking in the arid tropics. Conversely, he listed the Clay-colored Robin (*Turdus grayi*) and the White-collared Seedeater (*Sporophila torqueola*) as occurring in the humid tropics only. Our records show these species to be common in both valleys. Minor differences of this sort serve to show the incompleteness of the data available to Griscom.

There are no other published accounts of specimens taken in the Sierra de las Minas, though some of the early specimens, labeled simply "Cobán," could have come from here.

DISCUSSION

Of the 37 transient species recorded in the highlands in the present study, only six were not found also in the lowlands near the mountains. These were:

Hammond's Flycatcher (*Empidonax hammondi*)

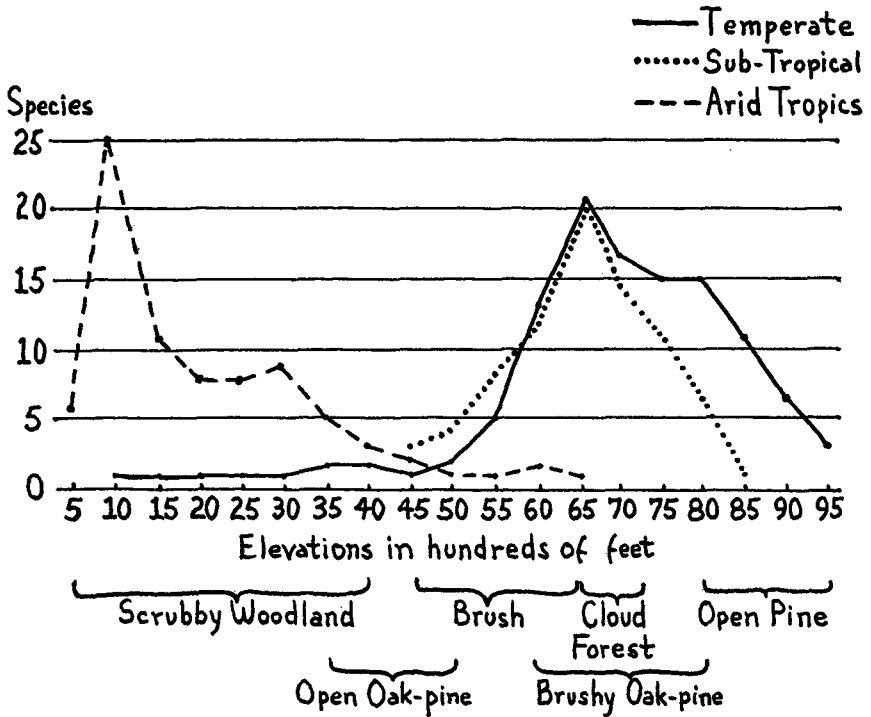


FIG. 1. The distribution of species within life zones and the major habitats on the south slope of the Sierra de las Minas.

Cedar Waxwing (*Bombycilla cedrorum*)
 Audubon's Warbler (*Dendroica auduboni*)
 Golden-cheeked Warbler (*Dendroica chrysoparia*)
 Hermit Warbler (*Dendroica occidentalis*)
 Lincoln's Sparrow (*Melospiza lincolni*)

The Cedar Waxwing has been found at lower elevation in other parts of Guatemala.

Sixty per cent, or 72, of the resident species found in the highlands did not occur in the adjacent lowlands. Table 1 gives the total number of breeding species in each family.

No attempt is made to divide the Sierra de las Minas into Subtropical and Temperate Zones. Griscom (1932:33) points out that the Subtropical Zone is poorly developed in Guatemala; this is certainly true on the south slope of the Sierra de las Minas. Figure 1 compares our elevational records of birds of three life zones. These zonal groups, based upon Griscom (1932:47,

54, and 67), are made up of species characteristic of (1) the high Temperate Zone, (2) the Subtropical Zone, and (3) the Arid Tropical Region. The latter area, which extends from the Motagua River up to 4,000 feet elevation, is included to show the transition from the lowlands to the highlands.

The distinctness between the Arid Tropical Region and the highlands is evident. However, the Subtropical and Temperate populations reside in nearly the same areas. Were the mountains greater in elevation, as in western Guatemala, a more distinct separation between life zones might exist.

ANNOTATED LIST

The following list covers all of the forms collected or recorded in the Sierra de las Minas by the present expedition. For each species the material is organized in this order: (1) common and scientific name; (2) localities at which specimens were taken and observations made (collecting stations are italicized); (3) altitudinal range (in forms occurring in the adjacent valleys as well as in the highlands, the lower elevation limit is given as "lowlands"); (4) relative abundance and major habitats; (5) data on nesting, molts, gonad size, and, where necessary, subspecific characters; (6) number of specimens taken of each sex.

No attempt is made in these accounts to include information obtained, or to list specimens collected, on previous expeditions to the Sierra de las Minas. Common names of species and, for the most part, scientific names follow Eisenmann (1955).

Green Heron (*Butorides virescens*). Purulhá. Lowlands to 5,000 feet. A single bird was seen on 30 September in a swampy valley.

King Vulture (*Sarcoramphus papa*). Usumatlán. Lowlands to 8,300 feet. Two immature birds were seen on 15 December. They were perched on a dead limb near the top of an 80-foot pine tree on a high mountain ridge.

Black Vulture (*Coragyps atratus*). Purulhá, Usumatlán. Lowlands to 5,900 feet. A few were seen in the mountains in early March.

Turkey Vulture (*Cathartes aura*). Salamá, Usumatlán, Purulhá. Lowlands to 8,000 feet. More common than *Coragyps* in the highlands, though we never saw more than a few in a group.

White-breasted Hawk (*Accipter chionogaster chionogaster*). Usumatlán. 6,200 to 8,500 feet. Fairly common resident in cutover and mature pine forest. All records, except two seen circling on 4 September, were of single birds. 2 females.

Red-tailed Hawk (*Buteo jamaicensis*). Usumatlán. Lowlands to 9,500 feet. A pair or two were seen regularly.

American Sparrow Hawk (*Falco sparverius tropicalis*). San Jerónimo. 3,300 to 4,800 feet. Two males collected 29 September and 10 January are small (wing: 177, 166 mm) and have no reddish-brown in the crown. They agree with the race *F. s. tropicalis*, which was a fairly common resident in the dry pine forests. The nominate race wintered abundantly in the lowlands. 2 males.

Plain Chachalaca (*Ortalis vetula*). Purulhá. Lowlands to 5,000 feet. Fairly common

in the highlands at the head of the Polochic Valley in heavy brush, thickets, and brushy woodland.

Black Chachalaca (*Penelopina nigra nigra*). *Usumatlán*, Purulhá. 5,000 to 8,000 feet. Resident in the moist mountain forests. A female taken 16 December had an enlarged ovary. 2 males, 1 female.

Buffy-crowned Wood-Partridge (*Dendrortyx leucophrys*). *Usumatlán*, Purulhá. 5,500 to 8,000 feet. Recorded in March in the brushy understory of a pine forest.

Ocellated Quail (*Cyrtonyx ocellatus*). *Usumatlán*. 8,100 to 8,300 feet. Uncommon resident in the grassy understory of the pine forest topping the higher ridges. Three specimens were taken in December, each from a covey of about 10 birds. A pair was flushed in March. 2 males, 1 female.

Ruddy Crake (*Laterallus ruber*). Purulhá. Lowlands to 5,000 feet. A single bird was flushed from the marsh near Purulhá on 17 March. The species is fairly common in the humid lowlands.

Rock Dove (*Columba livia*). *Usumatlán*. Lowlands to 5,800 feet. A few groups of white or largely white birds were noted near human habitations. No populations were found established in the wild.

Band-tailed Pigeon (*Columba fasciata fasciata*). *Usumatlán*. 2,400 to 8,500 feet. Fairly common resident in pine forest at high elevations; usually seen in flocks of 10 to 25 in flight or perched on high exposed limbs. A male taken 23 December had enlarged testes. The specimens measure: male, wing, 194–210 mm (202.3); tail, 132–146 (140.7); female, wing 197; tail missing. 3 males, 1 female.

Mourning Dove (*Zenaidura macroura marginella*). *Usumatlán*. Lowlands to 6,600 feet. Uncommon winter visitor on the south slope of the mountains; becoming more common in spring. A male collected 7 March was molting some of the body feathers. It measures: wing, 153 mm; tail, 151. 1 male.

White-winged Dove (*Zenaida asiatica asiatica*). *San Jerónimo*, *Usumatlán*. Lowlands to 5,100 feet. A small flock was seen on 3 March in pine woodland at 5,100 feet; another flock (20), from which a specimen was taken, was recorded on 14 November at 3,600 feet. The species was more common in the arid lowlands. 1 female.

Maroon-chested Ground-Dove (*Claravis mondetoura salvini*). *Usumatlán*. 5,700 to 6,300 feet. A flock of 10 to 20 birds wintered in a brushy woodland. A female collected 1 August had two large ova, one almost fully formed.

C. m. salvini is slightly smaller, more extensively white on the abdomen, and more uniformly slaty on the underwing than *C. m. mondetoura*. In color my four males are *salvini* except that the only fully adult male is largely brown on the underwing. The wing of this adult male measures 110 mm. 4 males, 4 females.

Green Parakeet (*Aratinga holochlora rubitorquis*). *Usumatlán*. 5,700 to 6,100 feet (the form *A. h. strenua* occurred in the arid lowlands). Uncommon resident in cultivated areas and scrubby woodland. A male taken 1 August had enlarged testes; another male, collected 14 December, was molting in the primaries. These two males are largely red on the throat and upper breast. They measure: wing, 157, 160 mm; tail, 116, 122; culmen, 24, 24. 2 males.

White-crowned Parrot (*Pionus senilis senilis*). *Usumatlán*. Lowlands to 7,500 feet. Widespread but not common; flocks of two to eight individuals were seen occasionally in brushy woodland and pine forest. Two specimens (taken 6 September and 1 August) were molting in the throat. My specimens are brighter and have redder tail coverts than *P. s. decoloratus*. 1 male, 1 ?.

Squirrel Cuckoo (*Piaya cayana thermophila*). *Usumatlán*. Lowlands to 6,300 feet.

Widespread in most woodland habitats in eastern Guatemala. The primaries were molting in a specimen taken 30 July. 1 male, 1 female.

Groove-billed Ani (*Crotophaga sulcirostris*). Purulhá. Lowlands to 5,000 feet. Several were seen in second-growth along a road on 11 January. The species was abundant in the lowlands.

Mottled Owl (*Ciccaba virgata*). Usumatlán. Lowlands to 5,700 feet. Heard calling occasionally.

Fulvous Owl (*Strix fulvescens*). Usumatlán. 6,500 to 7,500 feet. First recorded 5 March when Richard Graber collected two in cloud forest. Others were heard calling in the same area on 6 and 8 March. 1 male, 1 female.

Lesser Nighthawk (*Chordeiles acutipennis texensis*). Usumatlán. 8,000 to 8,200 feet. On 7 March a migrating group of 8 to 10 nighthawks circled through the pine forest at dusk on top of the Sierra de las Minas. Three males, wing, 184 to 193 mm (188.3), were taken from this flock. 3 males.

Pauraque (*Nyctidromus albicollis albicollis*). Salamá, Usumatlán. Lowlands to 5,700 feet. A specimen was taken on the ground in a small pine woods at 5,000 feet on 24 February. Others were seen and heard in December. The species was abundant in the lowlands. 1 male.

Whip-poor-will (*Caprimulgus vociferus chiapensis*). San Jerónimo, Usumatlán. 3,400 to 8,000 feet. Fairly common resident in the brushy pine forests. A female taken 16 March was in breeding condition (one ovum very large). 1 female.

White-collared Swift (*Streptoprocne zonaris*). Usumatlán. Lowlands to 6,100 feet. A small flock was seen at 6,100 feet on 10 December.

White-throated Swift (*Aëronautes saxatalis*). Usumatlán. 8,000 feet. Seen in the air over a pine-covered ridge 6 September and 7 March. The fall group was a loose flock of 12 to 15 individuals; the spring records were of a flock of three and, later in the day, one of five.

Green Violet-ear (*Colibri thalassinus thalassinus*). Usumatlán. 5,700 to 7,800 feet. Fairly common resident in brush and second-growth; heard frequently in December but apparently not calling in March. A female collected 7 March was molting in the wing. 1 male, 2 females, 1 ?.

White-eared Hummingbird (*Hylocharis leucotis leucotis*). Usumatlán. 5,700 to 8,100 feet. Abundant in the mountains in open pine-oak woodland and brushy areas. A male collected 31 August was molting both rectrices and remiges. Excluding this molting specimen the male series measures: wing, 50 to 56 mm (54); tail, 30 to 35 (32.7). 13 males, 3 females.

Red-billed Azurecrown (*Amazilia cyanocephala guatemalensis*). Usumatlán. Lowlands to 6,500 feet. Fairly common in second-growth and brush, usually within 15 feet of the ground. Two males collected, respectively, 5 September and 30 November were molting, the former in the wing, the latter in the tail. Males taken in July and early September had enlarged testes. 8 males, 6 females, 3 ?.

Berylline Hummingbird (*Amazilia beryllina devillei*). Usumatlán. 4,900 feet. Collected 24 December in brushy second-growth next to a field. 1 female.

Amethyst-throated Hummingbird (*Lampornis amethystinus salvini*). Usumatlán. 6,000 to 6,300 feet. Recorded only in December when fairly common in brush and second-growth. 5 males, 5 females.

Green-throated Mountain-gem (*Lampornis viridi-pallens viridi-pallens*). Usumatlán. 5,700 to 7,000 feet. Resident in brushy woods and cloud forest. Conspicuous during De-

cember, when a specimen molting its flight feathers and three specimens with slightly enlarged gonads were taken. 14 males, 6 females.

Garnet-throated Hummingbird (*Lamprolaima rhami rhami*). *Usumatlán*. 7,200 to 8,000 feet. A small flock was seen in the top of a flowering tree on several occasions in December and March. A male collected 10 December was molting. 1 male, 5 females.

Magnificent Hummingbird (*Eugenes fulgens viridiceps*). *Usumatlán*. 6,100 to 8,200 feet. Fairly common in summer on the ridge at 8,000 feet in pine forest; in December common in woodland and brush below 6,300 feet; in March, again seen in the pines at 7,700 feet. This is a good example of altitudinal migration. Specimens collected 6 September and in early December were molting. 11 males, 2 females.

Slender Sheartail (*Doricha enicura*). *Usumatlán, Purulhá*. 4,700 to 5,800 feet. Rare; inhabited heavy brush. 1 male, 1 female.

Sparkling-tailed Hummingbird (*Tilmatura duponti*). *Usumatlán*. 6,200 feet. A specimen, molting in the tail and with slightly enlarged testes, was taken 28 August. 1 male.

Ruby-throated Hummingbird (*Archilochus colubris*). *Usumatlán*. Lowlands to 7,300 feet. The earliest fall record was a specimen taken 29 August. Wintered sparingly in brushy woodland. 2 males, 2 females.

Wine-throated Hummingbird (*Atthis ellioti ellioti*). *Usumatlán*. 8,300 feet. A specimen was taken 4 September in a brushy part of an oak-pine forest. 1 ? (female plumage).

Broad-tailed Hummingbird (*Selasphorus platycercus guatemalae*). *Usumatlán*. 8,000 feet. Collected 3 September in a brushy area in a pine forest. 1 ? (female plumage).

Quetzal (*Pharomachrus mocinno*). *Usumatlán*. 6,400 to 7,000 feet. Quetzals were fairly common in the cloud forest. They were particularly noisy and conspicuous in December.

Mountain Trogon (*Trogon mexicanus mexicanus*). *Usumatlán*. 5,800 to 8,000 feet (recorded once at 1,000 feet). Uncommon resident in the cloud forest and brushy woodland. A male collected 5 September was molting both remiges and rectrices; two females taken in early December were molting their body plumage. 2 males, 2 females.

Bar-tailed Trogon (*Trogon collaris puella*). *Usumatlán*. Lowlands to 6,500 feet. Uncommon resident found principally in cloud forest. Specimens taken in July and August were molting. A female collected 6 March was ovulating. 5 females.

Belted Kingfisher (*Ceryle alcyon*). *Purulhá, Tactic*. Lowlands to 5,000 feet. Fairly common in winter in suitable habitat.

Green Kingfisher (*Chloroceryle americana septentrionalis*). *Purulhá*. Lowlands to 5,000 feet. A specimen was taken in a marsh 30 September. 1 female.

Blue-throated Motmot (*Aspatha gularis*). *Usumatlán*. 6,500 to 8,100 feet. Rarely seen resident in cloud forest; recorded once, 5 September, in pines. A female taken 5 August and a male 6 August were molting heavily. 1 male, 1 female.

Emerald Toucanet (*Aulacorhynchus prasinus prasinus*). *Usumatlán*. 6,000 to 8,000 feet (also recorded twice in the lowlands). Fairly common in cloud forest. Two specimens taken in August and one in December were molting.

In describing *A. p. stenorhabdus*, Dickey and van Rossem (1930) state that the mandibular tomium has a narrower dark margin than in *A. p. prasinus* (1.5 to 3 mm as opposed to 4 to 8 in the nominate form) and a wider embossed ridge at the base of the bill. In my three males the mandibular dark area averages 4.2 mm in width; in three females, 4.3, so they fit within the limits of *prasinus*. However, in my birds the width of the embossed ridge leans toward *stenorhabdus*. Since the boundary between these two races falls within Guatemala, it is not surprising that the specimens are inter-

mediate. One immature male was not included in the measurements. 4 males, 3 females. Red-shafted Flicker (*Colaptes cafer mexicanoides*). Usumatlán, Purulhá. 5,000 to 9,200 feet. Fairly common in pines and brushy woodland. 4 males.

Golden-olive Woodpecker (*Piculus rubiginosus yucatanensis*). Usumatlán, Salamá, Purulhá. Lowlands to 6,400 feet. Uncommon in open or brushy woodland. The testes of a male taken 24 February were somewhat enlarged. Three males measure: wing, 121 to 132 mm (126); tail, 67 to 78 (72); culmen, 25 to 29 (27.3). 3 males.

Lineated Woodpecker (*Dryocopus lineatus*). San Jerónimo. Lowlands to 3,200 feet. One seen in pine woodland on 17 September. Fairly common in the lowlands.

Acorn Woodpecker (*Melanerpes formicivorus lineatus*). Usumatlán, San Jerónimo. Lowlands to 9,000 feet. The most common woodpecker in pine forest; less common where the pines reach into lower country. A female collected 29 July had an enlarged ovary. 1 male, 7 females.

Yellow-bellied Sapsucker (*Sphyrapicus varius*). Usumatlán. Lowlands to 8,500 feet. Recorded on 20 December and from 4 to 7 March.

Hairy Woodpecker (*Dendrocopos villosus sanctorum*). Usumatlán. 5,700 to 7,200 feet. Fairly common in the cutover pine and oak forests; not found in the pines on top of the ridges. Molting birds were taken from 30 July to 2 December. The testes of a male collected 6 March were enlarged. The males measure: wing, 104 to 111 mm (107.5); tail, 59 to 63 (60.8); culmen, 24 to 27 (25.4). 7 males, 4 females.

Pale-billed Woodpecker (*Phloeocoastes guatemalensis guatemalensis*). Usumatlán. Lowlands to 6,700 feet. Fairly common in heavy forest. Birds taken on 4 August and 30 November were molting. 1 male, 1 female.

Strong-billed Woodcreeper (*Xiphocolaptes promeropirhynchus emigrans*). Usumatlán. Lowlands (once) to 7,200 feet. Uncommon resident at the edge of the cloud forest and in open oak-pine woodland. A female taken 5 August was molting. Two males taken in early March were nearly in breeding condition. 3 males, 2 females.

Black-banded Woodcreeper (*Dendrocolaptes picumnus puncticolis*). Usumatlán. 6,000 to 7,500 feet. Fairly common in open cutover woodland and cloud forest. A female collected 6 August was molting. A male taken 5 March was in breeding condition. 3 males, 5 females.

Spotted Woodcreeper (*Xiphorhynchus erythropygius erythropygius*). Usumatlán. 6,500 to 7,800 feet. Rare; found in cloud forest and pines. A male taken 17 December had enlarged testes; a female collected 8 March had a slightly enlarged ovary. The wing in the males measures 114 and 127 mm. 2 males, 1 female.

Spot-crowned Woodcreeper (*Lepidocolaptes affinis affinis*). Usumatlán. 6,500 feet. The common woodcreeper of the cloud forest; often seen with flocks of smaller birds. A specimen taken 31 July was molting. 5 males, 4 females, 1 ?.

Scaly-throated Foliage-gleaner (*Anabacerthia variegaticeps*). Usumatlán. 6,500 feet (there is also one lowland record). Collected in dense forest 7 December. 1 ?.

Ruddy Foliage-gleaner (*Automolus rubiginosus rubiginosus*). Usumatlán. 6,000 to 7,600 feet. Rare; found in cloud forest and brushy oak woodland. A nest was found in the process of construction 9 December. The remiges of a female collected on 30 August were molting. 1 male, 2 females.

Barred Antshrike (*Thamnophilus doliatus intermedius*). Usumatlán. Lowlands to 6,300 feet. Fairly common in brush and thickets; heard more often than seen. A female taken 29 July had an enlarged ovary (one egg in the oviduct). 1 male, 1 female.

Masked Tityra (*Tityra semifasciata personata*). Usumatlán. Lowlands to 6,400 feet. A male, with enlarged testes, was taken 6 March in pines. 1 male.

Black Phoebe (*Sayornis nigricans aquatica*). *Salamá*. Lowlands to 4,900 feet. Fairly common along the rapid streams of the Polochic drainage. 1 male, 1 female, 1 ?.

Tropical Kingbird (*Tyrannus melancholicus chloronotus*). *Purulhá*. Lowlands to 5,000 feet. Collected on 17 March. Fairly common in the lowlands. 1 male.

Social Flycatcher (*Myiozetetes similis texensis*). *Purulhá*. Lowlands to 5,000 feet. Collected from a group of three or four in a clump of bushes in a flooded meadow. 1 female.

Dusky-capped Flycatcher (*Myiarchus tuberculifer lawrencei*). *Usumatlán*. 6,300 feet (the race *M. t. connectens* was common in the lowlands). A male (wing 86 mm) was taken in brushy second-growth 18 December. The specimen is paler and more olivaceous on the back than any of my lowland material. 1 male.

Olive-sided Flycatcher (*Nuttallornis borealis*). *Usumatlán*. Lowlands to 8,200 feet. Uncommon winter visitor; usually seen perched in exposed dead trees in brushy areas or in pine woodland. A bird collected in December was molting. A male taken 7 March had slightly enlarged testes. 6 males, 1 female.

Western Wood-Pewee (*Contopus richardsoni richardsoni*). *Usumatlán*. Lowlands to 8,700 feet. Fairly common transient; recorded from 18 August to 30 October. Two specimens taken in late August had slightly enlarged gonads. Measurements of males: wing, 83-92 mm (87.8); tail, 63-71 (66.4). 5 males, 3 females.

Greater Pewee (*Contopus pertinax pertinax*). *Usumatlán, Salamá*. 3,500 to 7,600 feet. Fairly common resident; generally seen well above the ground on exposed perches in cutover or open oak and pine woodland. Two immature birds were taken in late July. A specimen taken 11 March was molting. 2 males, 6 females, 1 ?.

Yellow-bellied Flycatcher (*Empidonax flaviventris*). *Usumatlán*. Lowlands to 8,000 feet. Collected 31 July and 3 September. 1 male, 1 ?.

Hammond's Flycatcher (*Empidonax hammondi*). *Usumatlán*. 5,900 to 6,600 feet. Fairly common in brush and second-growth from 2 December to 8 March. 7 males, 5 females, 1 ?.

Yellowish Flycatcher (*Empidonax flavescens dwighti*). *Usumatlán*. 6,300 to 7,200 feet. Fairly common resident of the cloud forest and its brushy edges. Two males, taken 3 December and 5 March had incompletely ossified skulls. Four specimens collected in early March had enlarged gonads. 6 males, 5 females, 1 ?.

White-throated Flycatcher (*Empidonax albigularis axillaris*). *Usumatlán*. Lowlands to 5,900 feet. Recorded in July and August only; immature specimens were taken 30 July and 6 August. 1 male, 2 ?.

Buff-breasted Flycatcher (*Empidonax fulvifrons fusciceps*). *Purulhá*. 5,000 feet. Recorded in a marshy meadow in middle and late winter. A male taken 17 March had enlarged testes. 2 males, 1 female.

Belted Flycatcher (*Xenotriccus callizonus*). *Purulhá*. 5,100 feet. Larry Wolf took a female of this rare species in heavy brush on 11 January. The specimen has a darker crown than the type, which is possibly a sub-adult. 1 female.

Tufted Flycatcher (*Mitrephanes phaeocercus quercinus*). *Usumatlán*. 6,000 to 8,500 feet. Fairly common resident in oak, pine, and cloud forest. An immature bird was taken 28 August. The remiges and rectrices of a specimen taken 3 September were molting. The ovary of a female collected 4 March was somewhat enlarged. 5 males, 1 female, 1 ?.

Mountain Elaenia (*Elaenia frantzi ultima*). *Usumatlán*. 6,200 feet. Collected on 23 December in brushy woodland. 1 male.

Paltry Tyrannulet (*Tyranniscus vilissimus vilissimus*). *Usumatlán*. Lowlands to 8,000 feet. Fairly common in pine and mixed woodland in December. 6 males, 1 female.

Rough-winged Swallow (*Stelgidopteryx ruficollis*). *Purulhá*. Lowlands to 5,000 feet. Uncommon winter visitor. Specimens collected 25 October, 13 November, and 11 January were molting. Three dark specimens, whose under tail-covert shafts are dark subterminally, represent the race *S. r. julvipennis*. The remaining two specimens, both somewhat paler and with immaculate white crissum, represent *S. r. serripennis*. None of my specimens has dark tipped under tail-coverts or is as dark generally as *S. r. stuarti*, which is said to breed in the Vera Paz highlands. 3 males, 2 females.

Black-capped Swallow (*Notiochelidon pileata*). *Usumatlán, Tactic*. 4,800 to 7,500 feet. Uncommon resident; nesting in cutaway banks. At Tactic on 11 January at least eight birds were seen going in and out of the same hole, which was near the top of a road-cut 35 feet high. An immature specimen was collected 6 August. Two specimens taken in early December were molting. 1 male, 2 females, 2 ?.

Violet-green Swallow (*Tachycineta thalassina lepida*). *Usumatlán*. Lowlands to 5,900 feet. Common in winter; usually seen in flocks of up to 50 individuals. The remiges of three males taken in early December were molting. As a series the specimens probably represent the race *T. t. lepida*, but in rump coloration some of them are intermediate between *T. t. lepida* and *T. t. thalassina*. The males measure: wing, 112 to 117 mm (116); tail, 44 to 48 (46). 7 males, 1 female.

Bushy-crested Jay (*Cissilopha melanocyanea melanocyanea*). *Usumatlán, San Jerónimo, Purulhá, Tactic*. Lowlands (1,500 feet) to 6,500 feet. Fairly common in open deciduous woodland and second-growth; seen occasionally in cloud forest. Yellow-billed immature birds were taken in August and December. Molting specimens were collected in August, September, and December. 4 males, 4 females, 1 ?.

Black-throated Jay (*Cyanolyca pumilo*). *Usumatlán*. 5,700 to 7,000 feet. Recorded three times: twice in the cloud forest in early March and on 29 July, when an immature was taken in dense second-growth. Immature birds cannot be identified with certainty, but on geographic grounds the specimen probably belongs to the nominate race. 1 male.

Unicolored Jay (*Aphelocoma unicolor unicolor*). *Usumatlán*. 5,700 to 8,000 feet. The most common jay in the highlands; found in open pines, cutover oak-pine, and cloud forest. Yellow-billed immature birds were taken in July and December. Two males collected 4 March were in breeding condition. Two specimens taken in July were molting. Measurements of males: wing, 155–168 mm (162.3); tail, 144–155 (151). 7 males, 3 females, 1 ?.

Steller's Jay (*Cyanocitta stelleri ridgwayi*). *Usumatlán*. 5,100 to 8,800 feet. Rare resident; seen mostly in pines. The only specimen, taken 27 July, was molting its flight feathers. 1 female.

Brown Creeper (*Certhia familiaris pernigra*). *Usumatlán*. 5,900 to 8,400 feet. Fairly common resident; found in pines and cutover oak-pine woodland. A specimen taken in September was molting. A male collected 5 March had partially enlarged testes. Measurements of males: wing, 62 to 65 mm (63); tail, 54 to 62 (59); culmen, all 17. 5 males, 2 females, 2 ?.

American Dipper (*Cinclus mexicanus anthonyi*). 2,300 to 3,900 feet. Seen regularly in the steep canyons of the upper Polochic River near Tamahú, Alta Vera Paz. The flora and fauna of this area are humid tropical and not highland, but the dipper is mentioned here because of its status as a highland form in most of its range. 2 males.

Band-backed Wren (*Campylorhynchus zonatus vulcanius*). *Usumatlán, San Jerónimo*. Lowlands to 8,300 feet. Fairly common in brushy woodland and second-growth. Speci-

mens taken in July, August, and October were molting. Throughout the highland series the rufous of the abdomen does not extend forward onto the breast, the ventral spotting is sparse, and the back is more rufous than in specimens taken in the lowlands (which represent *C. z. restrictus*). 6 males, 3 females.

Plain Wren (*Thryothorus modestus pullus*). *Usumatlán*. Lowlands to 6,400 feet. Uncommon in brushy areas. A male taken 1 August had enlarged testes. 2 males, 2 females.

Southern House Wren (*Troglodytes musculus intermedius*). *Usumatlán, Purulhá*. Lowlands to 9,300 feet. Fairly common in forest edge and second-growth. Two males collected 28 July had enlarged testes. A male taken 9 December was molting its flight feathers. 4 males, 4 females.

Rufous-browed Wren (*Troglodytes rufociliatus rufociliatus*). *Usumatlán*. 5,900 to 8,400 feet. Fairly common resident in brush and cutover pine-oak woodland. A juvenile was taken 1 September. 6 males, 3 females, 3 ?.

Gray-breasted Wood-Wren (*Henicorhina leucophrys castanea*). *Usumatlán*. 4,700 to 6,700 feet. Fairly common in the undergrowth of the cloud forest. A female taken near a new nest on 15 March was in breeding condition. A male collected 1 September was molting. The culmen in the males measures: 14.5-15 mm (14.7); in the females: 12.5-14 (13.5). 3 males, 5 females.

Blue-and-white Mockingbird (*Melanotis hypoleucus*). *Usumatlán, Tactic*. 4,800 to 7,900 feet. Uncommon and difficult to approach; found in brush and second-growth. 3 males, 1 female.

Common Catbird (*Dumetella carolinensis*). *Usumatlán*. Lowlands to 5,900 feet. Collected 23 December in a brushy field; common in winter in the lowlands. 1 male.

Rufous-collared Robin (*Turdus rufitorques*). *Usumatlán*. 5,900 to 8,600 feet. Fairly common resident in cutover mixed forest, pines, and cloud forest; flocks of 15 to 20 seen in December. Immature specimens were taken 2 December and 8 March. 4 males, 2 females.

Mountain Robin (*Turdus plebejus differens*). *Usumatlán*. 6,300 and 6,400 feet. Two specimens were taken in late December along the brushy edge of the cloud forest. 2 females.

Black Robin (*Turdus infuscatus*). *Usumatlán*. 6,200 to 6,500 feet. Collected in mid-December in the brushy edge of the cloud forest. 1 male, 1 ?.

Brown-backed Solitaire (*Myadestes obscurus oberholseri*). *Usumatlán, San Jerónimo*. 4,700 to 7,300 feet. Fairly common resident in cloud forest and brushy woodland. A male collected 6 March was in breeding condition. Molting specimens were taken in August. 3 males, 7 females.

Wood Thrush (*Hylocichla mustelina*). *Usumatlán*. Lowlands to 7,300 feet. Recorded 4 December and 6 March in cloud forest. 1 male.

Spotted Nightingale-Thrush (*Catharus dryas dryas*). *Usumatlán*. 6,500 to 7,300 feet. Rare resident in cloud forest. A pair taken 1 August had enlarged gonads, though the male's remiges were molting. 2 males, 2 females.

Ruddy-capped Nightingale-Thrush (*Catharus frantzi alticola*). *Usumatlán*. 6,300 to 7,800 feet. Uncommon resident in cloud forest and brush. Birds taken in August and early March had enlarged gonads. 4 males, 1 female, 1 ?.

Orange-billed Nightingale-Thrush (*Catharus aurantiirostris bangsi*). *Usumatlán*. 5,500 to 5,900 feet. Uncommon resident; seen mostly in patches of pines in brushy areas. A male taken 6 August was molting its remiges. 3 males, 1 female.

Common Bluebird (*Sialia sialis guatemalae*). *Usumatlán, Purulhá, Tactic*. 4,900 to

9,200 feet. Fairly common resident in cutover woodland and pine forest, especially at higher elevations. A juvenile male was taken 29 August. 3 males, 7 females.

Cedar Waxwing (*Bombycilla cedrorum*). *Usumatlán, Salamá*. 5,500 to 6,600 feet. A few flocks of 20 to 30 birds were seen in late winter; one specimen was taken 8 March. 1 female.

Gray Silky-flycatcher (*Ptilogonys cinereus molybdophanes*). *Usumatlán*. 5,800 to 7,500 feet. Fairly common resident; conspicuous in the treetops of the cutover pine woodland. A male taken 16 December had somewhat enlarged testes. Specimens collected in August and September were molting. 7 males, 2 females.

Rufous-browed Peppershrike (*Cyclarhis gujanensis flaviventris*). *Usumatlán, Purulhá*. 5,000 to 6,500 feet. Collected in young pines 7 December and in second-growth in a swampy valley on 17 March. 1 male, 1 female.

Hutton's Vireo (*Vireo huttoni vulcani*). *Usumatlán*. 6,000 to 6,500 feet. Found in brushy woodland. Specimens were taken in September and December. 3 males, 2 females, 1 ?.

Solitary Vireo (*Vireo solitarius*). *Usumatlán, Salamá*. Lowlands to 7,000 feet. Fairly common and widespread in winter in all types of woodland. Four specimens represent the nominate race; a female (wing, 68 mm; tail, 51), taken 3 March at 3,500 feet, is dull colored and greenish and seems to be close to *V. s. montanus*, a resident form. 3 males, 1 female, 1 ?.

Warbling Vireo (*Vireo gilvus*). *Usumatlán*. Lowlands to 7,300 feet. Seen and heard singing in March.

Brown-capped Vireo (*Vireo leucophrys strenuus*). *Usumatlán*. 6,300 feet. A female collected 18 December in open woodland closely resembles the type of the Chiapas subspecies, *V. l. strenuus*. 1 female.

Cinnamon-bellied Flower-piercer (*Diglossa baritula parva*). *Usumatlán*. 5,500 to 9,300 feet. Common resident in brush and dense second-growth. A male collected 2 August had enlarged gonads. Several specimens taken in December were molting.

The specimens differ noticeably from a series of *D. b. montana* taken in western Guatemala by Baepler (1960) in being darker on the head, deeper cinnamon on the breast, shorter billed, and smaller in wing and tail. My males measure: wing, 54 to 57 mm (55.5); tail, 43 to 45 (44.2); culmen, 9 to 10 (9.2). My material seems to compare favorably with *D. b. parva*. 7 males, 6 females, 1 ?.

Red-legged Honeycreeper (*Cyanerpes cyaneus carneipes*). *Usumatlán*. Lowlands to 6,300 feet. Collected in heavy brush on 9 December; fairly common in the lowlands. 1 female.

Black-and-white Warbler (*Mniotilta varia*). *Usumatlán, Salamá, San Jerónimo*. Lowlands to 7,300 feet. Abundant winter visitor in most types of woodland. 4 males, 2 females, 1 ?.

Blue-winged Warbler (*Vermivora pinus*). *Usumatlán*. Lowlands to 6,500 feet. Collected in cloud forest 16 December. 1 male.

Tennessee Warbler (*Vermivora peregrina*). *Usumatlán*. Lowlands to 6,500 feet. Recorded in early December in second-growth. 3 females.

Nashville Warbler (*Vermivora ruficapilla ridgwayi*). *Usumatlán*. Lowlands to 6,300 feet. Recorded in December in brush and open woods. 1 male, 1 ?.

Crescent-chested Warbler (*Vermivora superciliosa superciliosa*). *Usumatlán*. 6,100 to 8,500 feet. Fairly common resident in cloud forest and pines. 6 males, 1 female, 6 ?.

Olive Warbler (*Peucedramus taeniatus taeniatus*). *Usumatlán*. 6,200 to 8,600 feet. Uncommon resident in pine forest. 4 males, 2 females.

Magnolia Warbler (*Dendroica magnolia*). *Purulhá*. Lowlands to 4,600 feet. An immature female collected 30 September was the first record of the fall. Wintered abundantly in the lowlands. 1 female.

Audubon's Warbler (*Dendroica auduboni memorabilis*). *Usumatlán*. 7,900 to 8,500 feet. Recorded in December and March in the pine forest on top of the ridges. The males measure: wing, 81 to 82 mm (81.5); tail, 61 to 63 (61.7); the females: wing, 71.5 to 74 (73); tail, 55.5 to 57.5 (56.5). 3 males, 4 females, 2 ?.

Townsend's Warbler (*Dendroica townsendi*). *Usumatlán*. Lowlands (once) to 9,300 feet. An abundant wintering form in pines and open woods. 12 males, 6 females, 1 ?.

Black-throated Green Warbler (*Dendroica virens virens*). *Salamá, Usumatlán*. Lowlands to 7,000 feet. Fairly common in winter in open woodland and cloud forest. 4 males.

Golden-cheeked Warbler (*Dendroica chrysoparia*). *Usumatlán*. 5,900 to 8,400 feet. Recorded in August and December in pine forest, deciduous woods, and second-growth. 3 males, 2 females, 1 ?.

Hermit Warbler (*Dendroica occidentalis*). *Usumatlán*. 6,200 to 8,400 feet. Uncommon in winter in pine forests. 2 males, 3 females.

Grace's Warbler (*Dendroica graciae decora*). *Salamá, Usumatlán*. 3,800 feet. The *Salamá* specimen was taken on 30 September, the *Usumatlán* specimen, one of two seen, on 3 March; both were in pines. 2 females.

Ovenbird (*Seiurus aurocapillus*). *Usumatlán*. Lowlands to 6,300 feet. Uncommon in winter in brushy woodland. Two of the specimens represent the nominate race. An unsexed bird, taken 17 December, seems to agree with the brown-backed race *S. a. furvior*. 1 male, 2 ?.

Louisiana Waterthrush (*Seiurus motacilla*). *Usumatlán*. Lowlands to 6,000 feet. Collected 13 December. 1 female.

MacGillivray's Warbler (*Oporornis tolmiei*). *Usumatlán*. Lowlands to 8,000 feet. Fairly common in winter in brushy areas. Following the criteria of Phillips (1947), four of the specimens (1 male: tail, 54 mm; difference between tail and wing, 6; 3 specimens, sex unknown: tail, 52 to 53.5 (53); difference between tail and wing, 4.5 to 6.5) represent the nominate form. Eight specimens (3 males: tail, 54 to 61 (57); difference between tail and wing, 0.5 to 5.5; 5 females: tail, 53 to 57.5 (55.5); difference between tail and wing, 0.5 to 6.5), which are less green in the back, agree with the race *O. t. monticola*. To me the distinctions between these two races are not great. 4 males, 5 females, 3 ?.

Common Yellowthroat (*Geothlypis trichas trichas*). *Purulhá*. Lowlands to 5,000 feet. Collected in a swamp on 11 January. Others were seen in the same area. 1 male.

Hooded Warbler (*Wilsonia citrina*). *Usumatlán*. Lowlands to 7,300 feet. One seen 4 March in a brushy area.

Pileolated Warbler (*Wilsonia pusilla*). *Usumatlán, Purulhá, San Jerónimo*. Lowlands to 8,300 feet. Abundant in winter. Both *W. p. pusilla* and *W. p. pileolata* are well represented, with the latter predominating in the highlands. 10 males, 4 females, 6 ?.

Red-faced Warbler (*Cardellina rubrifrons*). *Usumatlán*. 6,500 to 8,700 feet. Uncommon in cloud forest and pine woodland. 2 males, 1 female.

Painted Redstart (*Setophaga picta guatemalae*). *Usumatlán, Salamá*. 3,500 to 9,300 feet. Common in pine forest and open woodland. 3 males, 9 females.

Slate-throated Redstart (*Myioborus miniatus intermedius*). *Usumatlán, Purulhá*. Lowlands (2,400 feet) to 7,900 feet. Common in cloud forest, pines, and cutover woodland. Birds were singing and courtship behavior was noted in early March. 9 males, 3 females.

Pink-headed Warbler (*Ergaticus versicolor*). *Usumatlán*. 6,300 to 9,400 feet. Fairly common resident in cloud forest, pines, and second-growth. 3 males, 3 females, 3 ?.

Golden-browed Warbler (*Basileuterus belli scitulus*). *Usumatlán*. 6,100 to 7,800 feet. Fairly common in cloud forest and brushy areas. 3 males, 10 females, 1 ?.

Rufous-capped Warbler (*Basileuterus rufifrons*). *Usumatlán, Tactic, Purulhá*. Lowlands (once) to 6,600 feet. Fairly common in brushy areas. In one male (Purulhá, 17 March), which represents the nominate race, the abdomen is whitish; the remainder of the series is completely yellow below and represents the race *B. r. salvini*. 3 males, 5 females, 3 ?.

Boat-tailed Grackle (*Cassidix mexicanus mexicanus*). *Purulhá*. Lowlands to 4,800 feet. Seen occasionally in villages and cultivated areas. 1 male.

Melodious Blackbird (*Dives dives dives*). *Usumatlán*. Lowlands to 6,100 feet. Uncommon in woodland. 1 male, 1 female.

Black-vented Oriole (*Icterus wagleri wagleri*). *Usumatlán*. 5,700 to 6,500 feet. Rare resident in brushy second-growth. Molting birds were taken 6 August and 7 December. 2 males.

Yellow-backed Oriole (*Icterus chrysater chrysater*). *Usumatlán, Purulhá*. Lowlands (2,600 feet) to 6,100 feet. Uncommon in brush and second-growth. 2 males.

Baltimore Oriole (*Icterus galbula*). *Usumatlán, Salamá*. Lowlands to 8,700 feet. Fairly common in winter. 3 males, 2 females, 1 ?.

Bullock's Oriole (*Icterus bullocki*). *Usumatlán*. 7,800 feet. A single adult male was seen in a flowering tree in a brushy woodland, 7 March.

Summer Tanager (*Piranga rubra rubra*). *Usumatlán*. Lowlands to 6,300 feet. Collected in open deciduous woods 6 December; wintered abundantly in the lowlands. 1 male.

Flame-colored Tanager (*Piranga bidentata sanguinolenta*). *Usumatlán*. 6,500 to 7,300 feet. A male with enlarged testes collected in cloud forest on 4 March; others seen in the same area 6 March. 1 male.

Common Bush-Tanager (*Chlorospingus ophthalmicus dwighti*). *Usumatlán*. 5,700 to 7,800 feet. Abundant in cloud forest; occasionally seen in brushy second-growth. A male collected 4 March had enlarged testes. 9 males, 7 females.

Rose-breasted Grosbeak (*Pheucticus ludovicianus*). *Usumatlán*. Lowlands to 7,000 feet. Widespread and fairly common in winter in brush and forest edge. 4 males, 2 females, 3 ?.

Indigo Bunting (*Passerina cyanea*). *Usumatlán*. Lowlands to 6,000 feet. Fairly common in winter in brushy meadows and second-growth. 2 males, 1 female, 1 ?.

Hooded Grosbeak (*Hesperiphona abeillei cobanensis*). *Usumatlán*. 7,000 to 7,500 feet. Rare in cutover pine and cloud forest edge; recorded 6 August (specimen), 10 December, and 4 March. 1 male.

White-collared Seedeater (*Sporophila torqueola moreletii*). *Usumatlán, Purulhá*. Lowlands to 5,900 feet. Common resident in brushy meadows. Molting specimens were taken in August. 5 males.

Blue-black Grassquit (*Volatinia jacarina splendens*). *Usumatlán*. Lowlands to 6,000 feet. Common resident in meadows and brush. A male taken 6 December was molting into the adult plumage. Breeding specimens were collected in July and August. 3 males, 1 female, 1 ?.

Black-headed Siskin (*Spinus notatus notatus*). *Usumatlán, Purulhá*. 3,500 to 8,260 feet. Fairly common in pine forest, mixed woodland, and brushy second-growth. In

males taken 7 August, 18 December, and 11 January the testes were enlarged. An immature male collected 30 July was undergoing a general molt. 3 males, 2 females, 3 ?.

Dark-backed Goldfinch (*Spinus psaltria colombianus*). *Purulhá, Salamá*. Lowlands to 5,000 feet. A few small flocks were seen, mostly in meadows and brush. 1 male, 1 female, 1 ?.

Red Crossbill (*Loxia curvirostra stricklandi*). *Usumatlán*. 8,000 to 8,800 feet. Two specimens (wing, 92 and 95 mm; tail, 53 and 55) were taken from groups of two or three birds on 10 December and 7 March. 2 males.

Yellow-throated Brush-Finch (*Atlapetes gutturalis griseipectus*). *Usumatlán*. 5,700 to 7,900 feet. Fairly common in brush. Breeding birds were taken from 27 July to 8 September. An immature, streaked on the breast, was collected 31 August. Two molting specimens were taken in December. 8 males, 2 females, 3 ?.

Chestnut-capped Brush-Finch (*Atlapetes brunnei-nucha macrourus*). *Usumatlán*. 6,500 to 6,900 feet. Uncommon resident in the cloud forest understory. Two molting birds were taken in August. A male and female in breeding condition were collected 6 March. The specimens resemble *A. b. macrourus* of western Guatemala in color; however, they are somewhat small. The males measure: wing, 78 to 89 mm (83.7); tail, 81 to 91 (85); the females: wing, 79 to 87 (82.5); tail, 82 to 86 (84.8). 3 males, 4 females.

Rusty-crowned Ground-Sparrow (*Melospiza bicaruatum bicaruatum*). *Usumatlán, Purulhá, Tactic*. Lowlands (once) to 5,800 feet. Uncommon in brushy second-growth. 1 male, 2 females.

Rusty Sparrow (*Aimophila rufescens pyrgitooides*). *Usumatlán, San Jerónimo*. Lowlands to 8,500 feet. Fairly common in brushy second-growth and pine forest. The series is dark; the males measure: wing, 72 to 78 mm (75.2); tail, 77 to 86 (80.5); the female: wing, 73; tail, 67. 6 males, 1 female.

Rufous-collared Sparrow (*Zonotrichia capensis septentrionalis*). *Usumatlán, Salamá, Purulhá*. 4,700 to 5,900 feet. Fairly common in brushy fields. Specimens taken from 27 July to 9 September were in breeding condition; males were heard singing into early September. An immature bird was taken 16 December. 6 males, 3 females, 2 ?.

Lincoln's Sparrow (*Melospiza lincolni alticola*). *Usumatlán*. 5,800 to 5,900 feet. A small population wintered in an extensive meadow. An immature male was taken 1 December. 3 males, 3 females, 2 ?.

SUMMARY

In a field study in the Sierra de las Minas, the major mountain mass in eastern Guatemala, 123 resident and 37 migratory species were listed. Five collecting stations were utilized, but most of the time was spent on the south slope of the mountains above the lowland town of Usumatlán. Elevation ranged from 3,000 to 9,400 feet.

There is no clear-cut Subtropical Zone on the Sierra de las Minas. Subtropical and Temperate species occupy the same areas in the middle and upper parts of the range.

An annotated list of species is given.

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Most of the specimens are currently in my possession.

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