

BIRDS OF THE MONSERRATE AREA, CHIAPAS, MEXICO

By ERNEST P. EDWARDS and ROBERT B. LEA

The Lea-Edwards Expedition, with John W. Boehm of Elgin, Illinois, visited the Hacienda Monserrate in the state of Chiapas, México, in the spring of 1947, camping near the ranch house from March 24 to April 7. In the summer of 1950 Lea and Edwards with Douglas A. Lancaster and Virginia L. Lea returned to the Monserrate area and carried on field investigations from July 12 to August 17. In 1952, Edwards, with a field party consisting of J. Dan Webster, Arnold and Shirley Weinberg, and Stephen Russell, worked in the area from August 1 through August 10. Studies were made in an area measuring roughly six by ten miles, embracing both the mountain and plateau regions of southwestern Chiapas (see fig. 1). This paper is based on our collection of 705 specimens (106 spring; 599 summer), which represent 155 species. We have sight records of 29 additional species.

The Hacienda Monserrate, an extensive ranch owned by Xavier del Piño E., is situated in the district of Cintalapa among the mountains of southwestern Chiapas. It is approximately 10 miles east of the Oaxaca-Chiapas border and about 30 miles north of the Pacific Ocean. The main house, ranch buildings, corrals and homes of the workers on the hacienda are communally located on a sort of plateau, which, although rolling and deeply cut by streams, extends for about 15 miles to the south and a considerable distance to the east with little change in elevation. This comparatively flat land, on which are located several large haciendas, we call the Monserrate plateau. At the ranch house it reaches an elevation of 2200 feet. To the west and north of the ranch house, mountains rise steeply in nearly parallel ridges to an elevation of 5000 feet. The continental divide is, however, to the south; water draining from the vicinity of Monserrate flows into the Río Cintalapa, reaching eventually the Gulf of México.

Judging from faunal relationships, the Monserrate area appears to be divisible into the following zones:

- I. Arid Tropical Zone (2000–2500 feet)—Monserrate plateau.
 - A. Tropical Hardwood Forest—limited to the vicinity of streams on the plateau.
 - B. Semi-arid Scrub.
- II. Humid Upper Tropical Zone (4000–5000 feet).
 - A. Cloud Forest—occurred in a few humid ravines and on a few mountain ridges.
- III. Temperate Zone (2500–5000 feet).
 - A. Open Pine Forest (2500–5000 feet)—occurred on higher portions of the plateau and in the mountains.
 - B. Pine-oak Forest (3500–4500 feet)—occurred in the mountains.

ARID TROPICAL ZONE

In March and April the Monserrate plateau was a dry, semi-desert (fig. 2), whipped continuously by strong winds from the north and east. The weather was warm and sunny, except on March 25 when a light rain fell. Luxuriant vegetation was limited to the margins of the streams, where the tropical hardwood forest included *Mangifera indica*, *Licania* sp., *Inga spuria*, *Ficus* sp., *Psittacanthus schiedeanus*, *Salix humboldtiana*, *Psidium* sp., and *Citrus* sp. Beyond the stream borders the flora was of a xerophytic nature. Extensive areas of dead grasses (*Paspalum notatum*) were studded with scattered thickets of various scrubby trees and shrubs, including *Acacia pennatula* and at least one other *Acacia*, and *Zanthoxylum fagara*. The soil was very dry and hard. Corn and bean fields, irrigated patches of sugar cane, and small garden plots were tended on

the plains near the rivers and on the higher ground that was well situated for irrigation. On the small ridges near the ranch house and on the rising land to the north and west, open grassy woods of *Pinus oocarpa* began to replace the scattered *Acacia* and became more dense with increasing elevation.

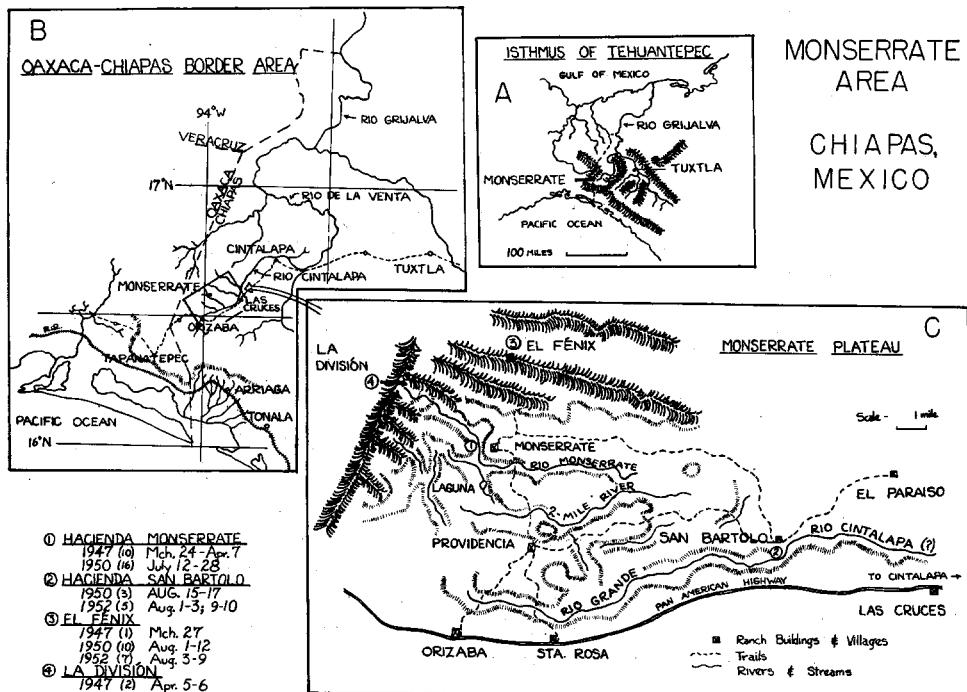


Fig. 1. Sketch maps of the Monserrate area, Chiapas, with inclusive dates of study for each locality.

During July and August the Monserrate plateau had a distinctly greener aspect. Rains were frequent and at times very heavy.

Our main collecting efforts on the plateau were directed along the three principal streams. The Río Monserrate originates in the mountains at La División and flows in a southeasterly direction across the plateau. In the spring it was a mere trickle through a boulder-strewn bed. In summer it was a clear, cold cascading stream which rose quickly with each torrential rain.

A mile south of the Monserrate ranch house there was a stream-fed *laguna* about one acre in extent, bordered by several acres of boggy, partly flooded land. Huge willows (*Salix humboldtiana*) dominated the vegetation in this area.

Two miles south of the ranch house a stream, which we called the "two-mile river," flowed west to east across the dirt road which led from Monserrate to the Pan-American Highway. The river had a wide, sandy bed, but it was never more than a small, shallow stream during our studies.

Still farther along, crossing the branch road about five miles south of the ranch house, was the largest river in the area. Its bed was 100 to 200 feet wide, and in places there was a broad flood plain, but it was only a few inches deep except after a hard rain. The river was known locally as the Río Grande, and we judged that it must have been one of the main tributaries of the Río Cintalapa.

Lizards were abundant on the plateau, where we collected specimens of *Cnemidophorus*, *Anolis*, *Basiliscus* and *Ctenosaura*. We often saw the toad *Bufo horribilis*, as well as *Rana pipiens*. We found *Boa constrictor* on the plateau and saw a specimen from the mountains. We saw no wild mammals on the plateau except *Odocoileus virginianus*, *Urocyon cinereoargenteus*, and the bat *Artibeus jamaicensis*. Cattle and horses ranged over the plateau and the pine-covered hillsides.



Fig. 2. Vegetation and topography near the edge of the Monserrate Plateau, looking northwest.

Birds Characteristic of the Arid Tropical Zone at Monserrate

<i>Ortalis vetula poliocephala</i>	<i>Pitangus sulphuratus</i>
<i>Burhinus bistriatus bistriatus</i>	<i>Calocitta formosa pomata</i>
<i>Columba flavirostris flavirostris</i>	<i>Thryothorus pleurostictus acaciarum</i>
<i>Zenaida asiatica mearnsi</i>	<i>Mimus gilvus gracilis</i>
<i>Aratinga canicularis canicularis</i>	<i>Polioptila albitorques vanrossemi</i>
<i>Piaya cayana thermophila</i>	<i>Cassiculus melanicterus</i>
<i>Morococcyx erythropygus erythropygus</i>	<i>Tangavirius aeneus</i>
<i>Amazilia violiceps violiceps</i>	<i>Icterus gularis gularis</i>
<i>Heliomaster constantii lecodiae</i>	<i>Icterus pustulatus formosus</i>
<i>Trogon citreolus sumichrasti</i>	<i>Volatinia jacarina splendens</i>
<i>Momotus mexicanus saturatus</i>	<i>Aimophila ruficauda lawrencii</i>
<i>Tyrannus melancholicus chloronotus</i>	

HUMID UPPER TROPICAL ZONE

Cloud forest conditions existed locally in the ravines and along the crests of a few ridges. A sharp ridge at the source of the Río Monserrate separated two stream systems north of the hacienda and was therefore called La División by the hacienda residents.

In the ravines on the north side of the ridge dense undergrowth occurred in a forest dominated by *Liquidambar styraciflua*.

El Fénix was an overgrown coffee plantation in a valley near the crest of the highest mountain ridge north of the Hacienda Monserrate. A small stream zigzagged through the valley where verdant undergrowth crowded the narrow bottomland. Like phalanges, a number of tiny tributary streams cut through steep-sided ravines, isolating a series of sharp ridges. Large deciduous trees, including *Liquidambar*, formed an umbrella over the ravines, where ferns, mosses, vines and such broad-leaved shrubs as *Hoffmania excelsa* grew in profusion. On a few of the higher ridges above the valley deciduous trees and shrubs grew in dense stands and supported an abundant epiphytic flora. Clouds hung low over this area much of the time. Yet we found scattered ridges where *Pinus oöcarpa* grew in open stands with almost no undergrowth or epiphytes.

Butterflies of the genus *Morpho* were common in the cloud forest. On one occasion Edwards watched a pack of about 50 adult and young *Nasua* rooting through the humus and fallen leaves.

Upon our return in 1952 the cloud forest had been partly opened up by removal of the big *Liquidambar*, and by construction of lumber roads. We found that the characteristic birds were still present in spite of this change, except *Pharomachrus*.

Birds Characteristic of the Humid Upper Tropical Zone at El Fénix

<i>Odontophorus guttatus</i>	<i>Empidonax flavescens dwighti</i>
<i>Geotrygon albifacies anthonyi</i>	<i>Henicorhina leucosticta prostheleuca</i>
<i>Pharomachrus mocino mocino</i>	<i>Turdus assimilis</i>
<i>Trogon collaris puerula</i>	<i>Myadestes obscurus oberholseri</i>
<i>Momotus momota lessonii</i>	<i>Myadestes unicolor unicolor</i>
<i>Aulacorhynchus prasinus prasinus</i>	<i>Catharus mexicanus mexicanus</i>
<i>Xiphorhynchus erythropygius erythropygius</i>	<i>Myioborus miniatus intermedius</i>
<i>Lepidocolaptes affinis affinis</i>	<i>Basileuterus culicivorus culicivorus</i>
<i>Dendrocincla homochroa homochroa</i>	<i>Piranga leucoptera leucoptera</i>
<i>Anabacerthia striaticollis variegaticeps</i>	<i>Chlorospingus ophthalmicus ophthalmicus</i>
<i>Sclerurus mexicanus mexicanus</i>	<i>Atlapetes brunnei-nucha brunnei-nucha</i>
<i>Grallaria guatimalensis guatimalensis</i>	

TEMPERATE ZONE

The transition from the Arid Tropical Zone on the plateau to the Temperate Zone in the mountains was gradual. Scattered pine trees on the higher portions of the plateau gradually merged into an open forest of *Pinus oöcarpa* on the mountain slopes (fig. 3). Above 4500 feet *Quercus pilicaulis* became abundant and in some areas was the dominant tree. Mixed pine-oak woodlands were prominent in the high country near El Fénix. In some areas the oaks were heavily laden with epiphytic plants (fig. 4). The undergrowth in these mountain forests was mainly grass (*Sporobolus* sp.), although various shrubs and herbaceous plants including *Alnus*, *Aspilia purpurea* and *Lobelia* were abundant along the small mountain streams. On some high ridges the undergrowth consisted of dense masses of flowering thorny legumes, where hummingbirds fed in large numbers.

The weather in the Temperate Zone was generally cool and clear with scattered showers in the late afternoon almost every day in summer. One heavy rain fell in August. We collected several frogs (*Eleutherodactylus*) along the streams and saw many small lizards and occasionally a *Thamnophis* sp. We saw one pack of about 15 peccaries and noted *Odocoileus virginianus* infrequently.

Birds Characteristic of the Temperate Zone

<i>Buteo jamaicensis costaricensis</i>	<i>Dendrocopos villosus sanctorum</i>
<i>Cyrtonyx ocellatus ocellatus</i>	<i>Contopus pertinax</i>
<i>Columba fasciata fasciata</i>	<i>Vireo solitarius montanus</i>
<i>Colibri thalassinus thalassinus</i>	<i>Dendroica gracae ornata</i>
<i>Hylocharis leucotis leucotis</i>	<i>Setophaga picta guatemalae</i>
<i>Eugenes fulgens viridiceps</i>	<i>Loxia curvirostra mesamericana</i>
<i>Tilmatura dupontii dupontii</i>	<i>Aimophila rufescens rufescens</i>
<i>Melanerpes formicivorus lineatus</i>	

The ranges of some of the Temperate Zone species were less clearly circumscribed than those of the Arid Tropical and Humid Upper Tropical species. We encountered *Melanerpes formicivorus* from the edge of the stream vegetation near the ranch house



Fig. 3. Edge of grassy, open pine woodland on lower mountain slopes.

all the way up through the pine woods to the high ridges at La División and El Fénix. *Dendroica gracae* was common in the dry upland thickets and in the pine-oak woods.

We observed also a number of tropical species which occurred regularly in more than one of the three zones which we have considered. Some of these were:

<i>Aratinga holochlora holochlora</i>	<i>Chloroceryle americana vanrossemi</i>
<i>Dryocopus lineatus similis</i>	<i>Turdus grayi</i>
<i>Amazilia cyanocephala cyanocephala</i>	<i>Piculus rubiginosus maximus</i>
<i>Myiodynastes luteiventris luteiventris</i>	<i>Piranga flava dextra</i>

Because the Isthmus of Tehuantepec affords, for lowland forms, a break through mountain barriers, while acting as a barrier itself to highland forms, it is to be expected that a complex situation would exist in an area bordering the isthmus. This is true at

Monserrate where Atlantic and Pacific lowland forms intermingle, and where highland forms show closest affinities to those of Central America.

The fauna of eastern México has easy access to the Monserrate area through the Río Grijalva system and is represented there by 19 forms. Birds generally considered to be Pacific lowland forms would be able to cross over to the Atlantic slope at elevations slightly above 1000 feet at the isthmus, or at elevations slightly above 3000 feet where numerous passes cut through the mountains farther to the east. That a consider-



Fig. 4. Dense growth of epiphytes on *Quercus pilicaulus* in pine-oak woods at 4500 feet elevation.

able infiltration of Pacific forms has occurred is demonstrated by the presence of *Ornithodoris vetula poliocephala*, *Trogon citreolus sumichrasti*, *Momotus mexicanus saturatus*, and *Cassiculus melanicterus* of western México, as well as *Burhinus bistriatus bistriatus*, *Aratinga canicularis canicularis*, *Morococcyx erythropygus erythropygus*, *Xanthoura yncas vivida*, *Tanagra affinis affinis*, and *Saltator atriceps peeti* which occur on the Pacific slope farther southeast. Some birds from Monserrate which show intermediacy between Mexican and Central American subspecies are *Cyclarhis gujanensis*, *Chamaetylas poliocephala*, and *Icterus gularis*. Relationship with the mountain fauna of Veracruz is shown by the presence of *Chlorospingus ophthalmicus ophthalmicus*, but

most other birds of the Temperate and Humid Upper Tropical zones are of wide-ranging forms or else belong to Central American subspecies.

Both in spring and summer we encountered North American transients in every type of habitat, although they were noticeably less common in the damp deciduous forests at La División and El Fénix. Most numerous of all were the wood warblers, especially near the lowland streams in March and April and in the pine-oak woods in August. Several species of fringillids moved about on the plateau in the spring, flocks of *Passerina cyanea* and *Chondestes grammacus* being the most conspicuous. Flycatchers were the most widely distributed of the transients; we encountered migrating empidonaces daily in March and April, and in August, in approximately equal numbers, from the stream bottoms up to the cloud forest.

Nesting activity undoubtedly reached its peak in May and June in the Monserrate area. It was surprising that even in this extreme southern portion of México we found the nests of only six species in March and April, namely *Buteogallus anthracinus*, *Myiozetetes similis*, *Pitangus sulphuratus*, *Corvus corax*, *Calocitta formosa*, and *Thryothorus pleurostictus*. Several other species were in breeding condition, but relatively few birds were singing persistently. Many species which we expected to find nesting were still moving about in flocks. Many specimens that we collected were in the prenuptial molt. In July and August nesting had been nearly completed. Twelve species were nesting, and many others moved about in family groups and fed young out of the nest.

A hawk not previously known in México is *Accipiter chionogaster*. The Central American subspecies, *montanus*, of *Vireo solitarius* has not previously been recorded in México. New records for the state of Chiapas include *Chaetura vauxi tamaulipeca*, *Dendrocincla homochroa*, *Nuttallornis borealis*, *Dendroica chrysoparia*, and *Chlorospingus ophthalmicus ophthalmicus*.

We are indebted to many persons in addition to members of the field parties for assistance throughout the course of this project. Among these are Dr. John Aldrich, Mr. Emmett Blake, Dr. Pierce Brodkorb, Dr. Robert Clausen, Dr. Herbert Friedmann, Dr. Norman Hartweg, Ing. Luis Macías, Dr. Rogers McVaugh, Don Xavier del Piño, Dr. George Sutton, and Dr. Josselyn Van Tyne.

In addition to the species which we collected, which are discussed in the systematic list, we observed the following 29 species:

Podilymbus podiceps, *Ardea herodias*, *Casmerodius albus*, *Heterocnus mexicanus*, *Mycteria americana*, *Cairina moschata*, *Anas discors*, *Sarcoramphus papa*, *Coragyps atratus*, *Cathartes aura*, *Buteo swainsoni*, *Buteo magnirostris*, *Circus cyaneus*, *Caracara cheriway*, *Falco sparverius*, *Penelopina nigra*, *Zenaidura macroura*, *Caprimulgus vociferus*, *Aëronautes saxatalis*, *Sphyrapicus varius*, *Tyrannus vociferans*, *Stelgidopteryx ruficollis*, *Hirundo rustica*, *Corvus corax*, *Bombycilla cedrorum*, *Peucedramus taeniatus*, *Piranga ludoviciana*, *Spinus psaltria*, *Chondestes grammacus*.

SYSTEMATIC LIST

Specimens used in comparing our collection are located in the following museums: Museum of Zoology, University of Michigan; Chicago Natural History Museum; United States National Museum. Somewhat shortened designations in the text refer to these institutions.

Crypturellus cinnamomeus. Rufescent Tinamou. 3♂♂, August 4-16. We recorded this species rarely. Edwards saw a whistling adult accompanied by one small chick at El Fénix on August 3. The two specimens from the humid forest are *soconuscensis*, while the specimen from the plateau is the much paler *vicinior*.

Chondroheirax uncinatus. Hook-billed Kite. 1♂, July 22. This specimen was taken by Lea in dense woodland along the Río Grande. The skin on the face was greenish; the irides were pale gray. It is an example of the melanistic phase which we cannot place subspecifically.

Accipiter chionogaster chionogaster. White-chested Hawk. 1 ♀, 1 ♀ im., July 23, August 6. The adult, carrying a dead immature *Tityra*, was taken just after it flew up from the bed of a small stream in the mountains. The young bird was in a group of four fledglings. These specimens represent the first records of this hawk from México. The nearest previously reported locality is apparently Tecpam, Guatemala (Hellmayr and Conover, 1949:74). Our specimens are more streaked below than all but one *chionogaster* in the collection of the Chicago Natural History Museum. That one, an adult male, is streaked somewhat more extensively than our adult female but is similar to it in showing a very faint suggestion of barring on the sides of the chest. The palest specimens of *Accipiter chionogaster ventralis* are as little streaked below as our birds, but they have much darker tibial feathers. [This hawk is considered by Storer (Condor, 54, 1952:289) to be a race of the Sharp-shinned Hawk, *Accipiter striatus*.—Editor.]

Buteo albicaudatus hypospodius. White-tailed Hawk. 1 ♂, March 29. We observed two pairs occasionally, from March 26 to April 3. One pair frequented the laguna area. In July and August we noted one to three birds in the plateau area, and one at El Fénix.

Buteo jamaicensis costaricensis. Red-tailed Hawk. 1 ♀, August 11. One or two noted occasionally over the plateau and at El Fénix in spring and summer. Our specimen is a rufescent example of *costaricensis*.

Buteo nitidus. Gray Hawk. 2 ♂ ♂, 2 ♀ ♀ im., March 26–August 15. This was the most common *Buteo* in the plateau area. Edwards saw a pair copulating on March 30, and on the same day he observed an adult soaring overhead with an individual in subadult plumage. Because of the great overlapping of wing and tail measurements and the considerable variation in amount of tail barring and darkness of underparts we prefer not to recognize *maximus* nor *micrus* and thereby follow Hellmayr and Conover (1949:157).

Buteogallus anthracinus. Common Black Hawk. 1 ♀, 1 ♀ jv., April 4, July 28. We encountered this hawk almost daily along the Río Monserrate and at the laguna. We saw a single adult near El Fénix on August 6 and 7. An occupied nest (March 26) in a tree along the Río Monserrate was composed of sticks placed on a horizontal crotch of a limb about 40 feet above the ground. On the occasion of the original discovery the adult birds flew about and screamed loudly. On subsequent visits to the nest we found that the bird in attendance remained quietly on the nest, or, as on April 2, both adults soared calmly at a considerable distance overhead. We did not determine the contents of the nest, but the adults appeared to be incubating. The female, when collected, had a crayfish and small mammal remains in its gizzard.

On July 16, Lea found a nest which contained one young bird (fig. 5). The nest was about 50 feet above the ground in a willow tree at the laguna. It was a rough platform nest composed of sticks and entwined with living vines on a horizontal crotch about eight feet from the main tree trunk. The slightly concave platform was approximately three feet in diameter and two feet thick. Two adults were active in the vicinity but we saw only one adult at the nest at any one time. On three occasions we saw a parent bird bring food to the nest; once the food item was a large lizard.

It seems to us that Hellmayr and Conover (1949) are correct in recognizing no subspecies of this species.

Geranospiza nigra. Black Crane-Hawk. 1 ♀, August 10. Collected at the Río Grande; this specimen had bright orange eyes.

Herpetotheres cachinnans cachinnans. Laughing Falcon. 1 ♀, July 25. Lea collected the only individual recorded, in a low pine tree on the plateau near the Río Monserrate. The specimen does not differ in any marked degree from Brazilian specimens. We agree with Hellmayr and Conover (1949: 237) that *chapmani* should be combined with *cachinnans*.

Penelope purpurascens purpurascens. Crested Guan. 1 ♀, 2 ♀ ♀ im., 1 ♀ jv., August 2–6. Edwards saw two guans in the sweet gum forests at La División on April 5. We saw and heard this species frequently in the wet forests at El Fénix in August. They moved about in large trees in groups of two to five. The birds were very noisy, and sometimes stupidly curious, coming within 30 feet of us to peer down, stretching their long necks, and then standing erect with crests raised and bare red throat areas prominent.

Ortalis vetula poliocephala. Plain Chachalaca. 1 ♂, 1 ♀, July 25, March 26. In March and April we saw or heard this species almost every day that we worked in the plateau area, particularly along the streams. In July and August we saw individuals much less frequently and heard them call only

twice. The female specimen was compared with the type of *vallicola*. Our bird is distinctly larger, paler on the belly, and more buffy on the crissum and tail. The tips of the rectrices are considerably more buffy, and this tipping is about 50 mm. in length, as compared with 15 to 20 mm. on *vallicola*.

Colinus virginianus insignis. Bob-white. 7♂♂, 4♀♀, March 29–August 9. We saw coveys of four to six birds almost daily from March 26 to April 1 in the grasslands on the Monserrate plateau. These birds were all adults and did not call. In July and August pairs were common, and many males were calling daily. On July 25 Lea flushed an adult female with her brood of about a dozen chicks. The female taken on July 26 had a shelled egg in her oviduct.

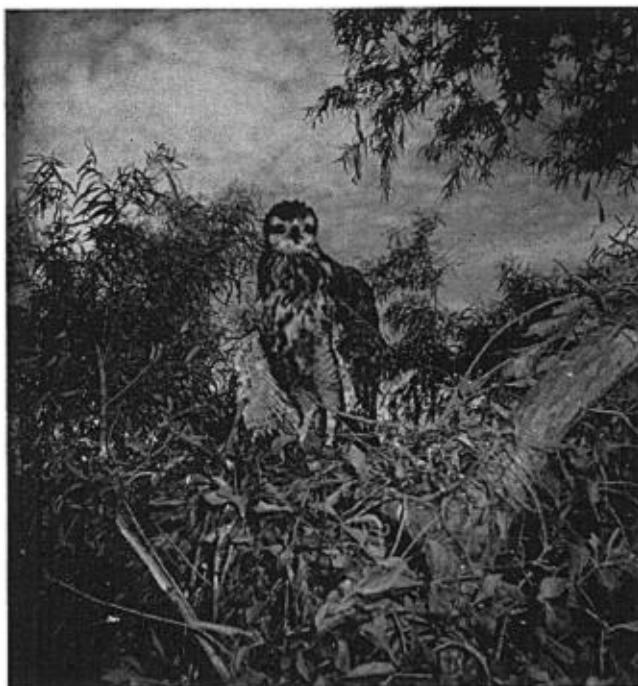


Fig. 5. Young of Common Black Hawk on nest in large willow.

We have compared our birds with the material in the University of Michigan Museum, the National Museum, and the Conover collection at the Chicago Museum. They agree well with series of *insignis*. They are less rufous on the back than *coyolcos* and do not show the extensive black markings on the chest characteristic of that subspecies. Our specimens show several variations from white superciliary and malar streak to all black head. Partly for this reason we believe that *nelsoni* will prove to be a synonym of *insignis*.

Odontophorus guttatus. Spotted Quail. 2♂♂, 1♂ jv., 4♀♀, April 5–August 9. Edwards surprised a group of several birds in the undergrowth on the north side of La División on April 5. They ran rapidly, holding their crests erect and calling excitedly, and flew only when hard pressed. In August we noted the species frequently at El Fénix in the cloud forest, where they behaved in a similar manner.

Individuals showing the supposed characters of *matudae* occur in the same locality as individuals which appear to be typical *guttatus*. One of our specimens combines narrow shaft streaks on the throat with the typical tear-shaped markings on the breast feathers of supposed *matudae*.

Dactylortyx thoracicus. Long-toed Quail. 2♂♂, 2♀♀, 1♂ jv., 1♀ jv., August 5–7. Noted only once in 1950, this species seemed fairly common in 1952. We saw several family groups and heard birds calling almost daily at El Fénix. Subspecific placement is doubtful until the relationships are studied further.

Cyrtonyx ocellatus. Ocellated Quail. 1 ♀ im., 1 jv. (sex ?), August 11–13. We often flushed coveys of this quail in the grassy pine-oak woods near El Fénix.

Tringa solitaria cinnamomea. Solitary Sandpiper. 1 ♂, March 30. We saw two at the "two-mile river" on March 28 and 30, and one at the Río Grande on March 31.

Actitis macularia. Spotted Sandpiper. 1 ♂, August 16. We noted one or two Spotted Sandpipers along the Rio Grande on March 30 and August 15 to 17.



Fig. 6. Mexican Thick-knee, a common but shy nocturnal bird of the plateau.

Burhinus bistriatus bistriatus. Mexican Thick-knee. 1 ♀, August 16. In March and April we often heard the Alcaraván, as the Mexicans call this species (fig. 6), at night in the pastures and cultivated fields, and along the irrigation ditches on the Monserrate plateau, but we never saw or heard them between dawn and dusk. They commenced calling, a loud "barking," somewhat like the call of a Sandhill Crane, in the twilight after sundown, their night activity increasing as the moon waxed. They spent most of the time on the ground, although when disturbed they usually took wing, often flying half a mile or more before alighting. Sometimes their flight was low and erratic, not carrying them above the skyline. Thus in the twilight the birds could scarcely be discerned. A bird which Lea pursued one night screamed loudly as it ran along an erratic course, sometimes taking wing for a low flight over the mesquite, or running up and over low bushes as though ascending a flight of stairs three steps at a time.

In July and August the birds called irregularly and infrequently. Lea and a party of Mexicans collected one of a pair in short grass near some ranch buildings. This female ran swiftly and then stood still in the headlights of the jeep, pointing head and tail in a horizontal crouch.

Columba flavirostris flavirostris. Red-billed Pigeon. 2 ♂ ♂, 1 ♀, July 21–August 16. Encountered often in small flocks in March, April, July, and August along or near the rivers of the plateau country. No nesting activity was observed.

Columba fasciata fasciata. Band-tailed Pigeon. 1 ♀, August 3. We saw this species occasionally in the pine-oak woods near El Fénix in August.

Zenaida asiatica mearnsi. White-winged Dove. 3 ♂ ♂, 2 ♂ ♂ im., July 13–August 15. Second in

abundance to *Scardafella inca* among the doves on the plateau. All specimens are well within the size range of *mearnsi*, and the only one in fully adult plumage agrees with that subspecies in coloration.

Scardafella inca. Inca Dove. 3♂♂, 1♀, March 31-July 25. The most abundant dove at Monserrate. We saw it every day on the plateau, feeding in small flocks in the barnyards and around dwellings, or in the fields and pasturelands.

Columbigallina passerina pallidescens. Ground Dove. 2♂♂, 3♀♀, 1(sex?). Common along the roads and streams of the plateau.

Claravis pretiosa. Blue Ground Dove. 1♂, 1♂ im., July 21. Although seldom seen, individuals were frequently heard calling in August.

Leptotila verreauxi angelica. White-fronted Dove. 3♂♂, 1♂ im., 4♀♀, March 29-August 9. We saw individuals occasionally in woodland along the rivers on the plateau and somewhat more frequently on the lower slopes of the mountain ridges and in the high humid forest. Although the two females from La División and El Fénix look like *bangsi*, the male from El Fénix is typically *angelica*.

Geotrygon albifacies anthonyi. White-faced Quail-Dove. 2♂♂, 1♀, August 6-11. This species inhabited the humid forest. Individuals seemed to feed alone, and when disturbed they quickly flew out of sight in the undergrowth.

Aratinga holochlora holochlora. Green Parakeet. 2♂♂, 3♀♀, March 29-July 22. Common on the plateau in March. The screeching flocks became even larger and more noisy in early April as they moved into *Mimosa* trees to feed on the developing seeds. In July and August flocks of as many as 50 birds were seen daily on the plateau. We saw them occasionally in small numbers at La División and El Fénix. Our specimens are too small to be *strenua*.

Aratinga canicularis canicularis. Orange-fronted Parakeet. 4♂♂, 3♀♀, July 17-August 10. Lea saw six of these parakeets at the "two-mile river" on March 30. In July and August they were common on the plateau, ranging in flocks of as many as 50 birds, but they never were as abundant as *A. holochlora*. We did not see them at El Fénix.

Three of our specimens show the broad band of orange which is typical of the nominate race, whereas the others show less orange. One can be matched in amount of orange by some *eburnirostrum*. The taxonomic situation seems to us not as simple as Bangs and Peters (1928:388-389) indicated in characterizing *canicularis* as a broad-banded, yellowish-bellied race and *eburnirostrum* as a narrow-banded, greenish-bellied race. There seems to be little, if any, difference in yellowness of belly between the two subspecies, and some individuals could not be correctly placed on the basis of width of the orange band.

Pionus senilis senilis. White-crowned Parrot. 1♀, August 10. We occasionally saw flocks of 10 to 20 birds in the pine-oak woods and cloud forest at El Fénix in August.

Amazona autumnalis autumnalis. Yellow-cheeked Parrot. 1♂, 2♀♀, March 29-August 16. In March and April we saw this species almost daily along the rivers on the plateau and at La División in flocks numbering up to six birds. It seemed considerably less numerous in July and August. Our specimens are small *autumnalis*, the March female tending toward *salvini* in narrowness of the orbital band of yellow.

Piaya cayana thermophila. Squirrel Cuckoo. 4♂♂, 3♀♀, March 28-August 16. We saw this species occasionally along the plateau rivers, as well as once at El Fénix and once at La División.

Crotophaga sulcirostris sulcirostris. Groove-billed Ani. 3♂♂, 4♀♀, April 1-July 27. Common in the dry thickets near the streams on the plateau in March, April, July, and August. We watched adults feeding fledglings on several occasions from July 21 to 27, and we saw an adult in a flimsy stick nest on July 27.

Morococcyx erythropygus erythropygus. Lesser Ground Cuckoo. 1♀, 1♂ im., July 25, August 15. Recorded only twice, when Lancaster collected a female in burned-over brush near the "two-mile river" and Lea took a young male in dense growth along the Río Grande.

Our specimens are darker than *mexicanus* and show the belly color characters attributed to *erythropygus* by van Rossem (1938:170). However, the tail characters do not follow the pattern indicated by him. The feathers, although new, do not show a strongly contrasting pattern, and in this respect show a tendency toward those of *mexicanus*. In addition the specimens show a tendency toward *mexicanus* or *macrourus* in having very long tails.

Geococcyx velox melanurus. Lesser Road-runner. 3♂♂, 2♀♀, April 2-July 26. Recorded

occasionally in spring and summer on the plateau. We also saw it three times in the high, dry pine woods near El Fénix in August. The female taken on April 2 was in breeding condition.

Following Moore's (1934:455-470) analysis of the species we place our birds with *melanchima* on the basis of (1) absence of gray on the second rectrix, and (2) broad subterminal black bar on the lateral rectrix. Two male and two female specimens show some intergradation toward *affinis* in the following respects: (1) one male has a subterminal black bar which measures 13 mm. on the left lateral rectrix and 10 mm. on the right, (2) another male has a slight marbling of gray (almost entirely away from the shaft) on the second rectrix, and (3) the females are large. In the other characters listed by Moore in separating *melanchima* and *affinis* the measurements of our specimens overlap those of both subspecies.

Tyto alba pratincola. Barn Owl. 1 ♂, August 17. This specimen was captured in an old barn by natives, who reported finding the species occasionally about the ranch buildings.

Glaucidium brasiliandum ridgwayi. Ferruginous Pygmy Owl. 4 ♂♂, 3 ♀♀, March 30-August 15. We heard this owl calling in the early morning, at night, and occasionally through the day in March and April, but much less frequently in July and August. We did not record the species at La División or El Fénix. Lea saw three of them together near the Río Grande on March 30. One was feeding on a small mammal. When it flew it carried the food in its talons. Our specimens represent both rufous and brown phases and fall well within the size limits of this race.

Chordeiles acutipennis micromeris. Lesser Nighthawk. 1 ♀, July 21. This specimen, taken by Lancaster, is our only record. It is too small for *texensis*, but fresh material is needed to confirm assignment of birds of this area to *micromeris*.

Nyctidromus albicollis yucatanensis. Pauraque. 3 ♂♂, 4 ♀♀, March 29-July 27. Calling and night activity of this species increased as the moon waxed in the spring, and during the bright moonlight nights of April 1 to 5 Pauriques were calling in great numbers on the Monserrate plateau. In July we flushed one occasionally at the laguna in the day time and along the roads at night, but we seldom heard them calling.

Our birds fit well with *yucatanensis* in most respects, although in small size they show a strong tendency toward the Central American race *intercedens*.

Streptoprocne zonaris mexicana. White-collared Swift. 1 ♂, July 13. Edwards collected one of about 40 that circled over a cornfield on the plateau, and on July 16 he saw another over our Monserrate camp.

Chaetura vauxi tamaulipeca. Vaux Swift. 1 ♂, July 13. We noted a few small, dark swifts in the high country on March 27 and April 5. In July and August we saw them almost daily over the plateau and at El Fénix, singly or in groups of as many as 50 individuals.

The specimen taken resembles *tamaulipeca* closely, is quite different from *richmondi*, and is slightly less blackish (more brown) than a large series of *gaumeri* in the National Museum collection. It cannot be definitely established that our specimen represents the breeding population, but we suspect that *tamaulipeca* ranges more widely than known heretofore. It has not previously been reported from Chiapas.

Colibri thalassinus thalassinus. Violet-eared Hummingbird. 1 ♂, August 6. Lea collected this specimen in a thicket in the pine-oak woods. It corresponds with *thalassinus* in size and thickness of bill, tending somewhat toward *minor* in reduction of blue on the chest.

Hylocharis leucotis leucotis. White-eared Hummingbird. 6 ♂♂, 1 ♂ im., 1 ♀ (?) im., April 5-August 10. This species was second in abundance to the following hummer in the highland pine and pine-oak woods.

Amazilia cyanocephala cyanocephala. Azure-crowned Hummingbird. 7 ♂♂, 3 ♀♀, 2 im. (sex?), March 25-August 6. We found this species to be the most abundant hummingbird both on the plateau and in the pine woods of the high mountains.

Amazilia violiceps violiceps. Violet-crowned Hummingbird. 3 ♂♂, 3 ♀♀, 2 im. (sex?), March 25-August 3. We saw this species frequently along the rivers and at the laguna in the spring and summer.

We find that the more iridescent green back is the best way of distinguishing the subspecies *violiceps* from other forms. Our specimens are dark greenish blue on the crown, as in the "guerrerensis" or *viridifrons* stage mentioned by Griscom (1934:376). All of the more than 20 specimens of *violiceps* from western México in the Chicago Museum collection have iridescent blue crowns, whereas all our specimens and the one Chiapas bird in the collection have dark crowns without iridescence. In addi-

tion, our specimens and the aforementioned Chiapas bird are brónzy green backed, whereas birds from western México (*elliotti*) are dull brownish on the back.

Lampornis viridi-pallens viridi-pallens. Green-throated Mountain Gem. 1♂, 2♀♀, 1(sex?), August 5-11. Recorded infrequently at El Fénix, where Edwards collected the specimens in humid forest. They do not differ from typical *viridi-pallens* from Guatemala, except that they are more brassy above.

Eugenes fulgens viridiceps. Rivoli Hummingbird. 5♂♂, 1♂ im., August 5-10. We noted this species occasionally among the thorny legumes in the high pine woods in August. Our specimens have the long culmen (28-29 mm.) of the Guatemalan subspecies.

Heliodoxa constantii leocadiae. Plain-capped Star-throat. 3♂♂, 1♀, April 2, August 2. Recorded only on the plateau.

Tilmatura dupontii dupontii. Swallow-tailed Hummingbird. 1♂, 2♂♂ im., 2♀♀, August 5-10. We saw several flying about the thorny legumes in the pine woods near El Fénix. That the width of the chestnut tail band varies considerably is demonstrated by two of our male specimens with bands which measure, respectively, 2.5 and 7.0 mm.

Archilochus colubris. Ruby-throated Hummingbird. 1♀, March 29. We recorded this transient species only on this date.

Pharomachrus mocino mocino. Quetzal. 1♀, August 11. We looked for this bird in vain in 1947, and upon our return in 1950 we made it the object of intensive search. Lea saw a single female in the dense cloud forest at El Fénix on August 5, 8, and 10. On August 11 we watched three Quetzals which appeared to be a family group moving about warily in the tree tops. We did not see a fully adult male. An engineer told us of shooting a long-plumed Quetzal at El Fénix in June.

Trogon citreolus sumichrasti. Citreoline Trogon. 2♂♂, 1♀, 1♀ im., March 30-August 15. We saw one or two birds infrequently, and sometimes heard them calling, in the heavy riverside growth on the plateau in March and April. They called less frequently in July and August.

Our March specimen agrees generally with the type and a series of *sumichrasti* in the Michigan Museum collection, although it is in fresher plumage and shows much brighter yellow on the abdomen. The summer specimens (except the adult female), even in their extremely worn condition, show a greater extent of white tipping on the outer rectrix than does the nominate subspecies.

Trogon collaris puella. Collared Trogon. 4♂♂, 4♀♀, April 5-August 15. Fairly common in the humid forests. Most of the birds that we saw in April seemed to be paired.

Trogon violaceus braccatus. Violaceous Trogon. 1♂, 2♀♀, July 22-August 15. We recorded this species infrequently on the plateau and at El Fénix in the summer.

Chloroceryle americana vanrossemi. Green Kingfisher. 2♂♂, 2♀♀, 2♂♂ im., 1♀ im., March 26-August 16. We saw one or two individuals of this species almost daily along the streams on the plateau and at El Fénix. Our adult male specimens are especially large. We compared our specimens with the type and a good series of *vanrossemi* in the Michigan Museum collection and a series of *septentrionalis* in the Chicago Museum and assigned them to *vanrossemi* on the basis of their large size, the restricted amount of green spotting on the underparts, and the smallness of the green submalar streak.

Momotus mexicanus saturatus. Russet-crowned Motmot. 4♂♂, 2♀♀, 1♀ jv., March 30-August 15. We saw them almost daily along the rivers on the plateau. They called much more often in the summer than in the spring. In July we occasionally saw family groups with non-racket-tailed birds among them. On April 5 Lea saw one bird in the sweet gum forest at La División, rather far from its usual habitat.

Momotus momota lessonii. Blue-crowned Motmot. 1♀, April 6. We observed individuals occasionally in the humid forests at La División and El Fénix in August. The central rectrices of the specimen are 65 mm. long, sheathed for about half their length, and completely invested with barbs.

Aulacorhynchus prasinus prasinus. Emerald Toucanet. 4♂♂, 5♀♀, April 6-August 11. We saw these birds occasionally in the humid forests in groups of two or three in April, and as many as 20 in August. They often sat motionless and called with repeated loud *wack . . wack . . wack . .* sounds. They seemed both curious and stupid.

Only two of our specimens, both females, are fully adult and suitable for comparison. They are closest to *prasinus* in color and one has the broad tomial stripe (5.5 mm.) of that subspecies, whereas

the other has a rather narrow stripe (4 mm.). They lack the golden tinged pileum, hindneck and upper back of *chiapensis*.

Piculus rubiginosus maximus. Ruddy-green Woodpecker. 5♀♀, July 16–August 10. We saw this species infrequently on the plateau and in the pine-oak woods at El Fénix and La División.

Dryocopus lineatus similis. Lineated Woodpecker. 2♂♂, 1♀, April 1–July 23. We saw this woodpecker occasionally in the large trees along the waterways and in the open pine woods on the plateau. On August 3 Edwards saw a single bird in the deciduous forest at El Fénix.

The male taken in July is a good match for a series of near topotypes of *similis* in the Chicago Museum. The female shows a tendency toward *scapularis* in having a broken suborbital and subauricular stripe.

Melanerpes formicivorus lineatus. Acorn Woodpecker. 4♂♂, 2♀♀, 1♀ im., March 26–August 9. We saw this species occasionally in the open pine woods on the plateau. Although the male taken in spring had much enlarged testes, we observed no indications of nesting except that the birds were often paired. Near El Fénix the species was common. On August 10 and 11 we saw flocks of more than 50 individuals flying, feeding, chasing one another noisily and sidling back and forth on horizontal branches in the pine-oak woods.

Our specimens agree with a series of topotypical *lineatus* in the Chicago Museum, showing heavy striping below without a solid black chest band.

Centurus aurifrons. Golden-fronted Woodpecker. 5♂♂, 2♀♀, 1♀ (?), March 29–August 17. We saw this species frequently in all types of environment on the plateau. In March and April we watched them investigating nest holes in the palm trees around the ranch house and in the large willow trees at the laguna. Most frequently they were in pairs, and occasionally we observed them engaging in acrobatic feeding antics, swinging from small branches to pluck ripe fruit.

Compared with the series that Wetmore (1943:273–277) studied, our specimens appear to be intermediate between *frontalis* and *polygrammus*, but slightly closer to the former. They have wider black and white bars above than does *polygrammus* and more black markings on the rump and upper tail coverts. The shade of yellow on the abdomen seems pale, closer to that of *frontalis*.

Dendrocopos villosus sanctorum. Hairy Woodpecker. 2♂♂, 2♀♀, August 7–11. Noted infrequently in the pine-oak woods.

Dendrocopos scalaris percus. Ladder-backed Woodpecker. 1♂ im., 1♀, 1♀ im., July 16–23. On the plateau we saw individuals occasionally. Edwards saw one at La División on April 5. In breast spotting and back striping our specimens agree closely with the type of *percus*. They differ little from *parvus* in color and the immature specimens do not exceed *parvus* in size, but the adult female is definitely larger. Our specimens show no tendency toward the tail pattern of *azelus*.

Phloeocetes guatemalensis. Guatemalan Ivory-billed Woodpecker. 2♂♂, August 5–8. One to three birds noted together in the cloud forest. Our specimens appear to be well marked examples of two different subspecies, *guatemalensis* and *nelsoni*. This suggests that El Fénix may be in a narrow zone of intergradation between two forms. Further collecting is needed to show whether the local population is extremely variable.

Dendrocincla homochroa homochroa. Ruddy Woodhewer. 1♂, August 10. Taken by Lea amid dense undergrowth in the humid forest, this specimen apparently is the first known from Chiapas.

Sittasomus griseicapillus sylviooides. Olivaceous Woodhewer. 5♂♂, 1♀ (?), March 27–August 11. Noted occasionally in the humid forests at La División and El Fénix in March, April, and August.

Dendrocopos certzia sancti-thomae. Barred Woodhewer. 1♀, August 8.

Xiphorhynchus flavigaster eburneirostris. Ivory-billed Woodhewer. 3♂♂, April 5–August 4. We noted this species in the sweet gum forest at La División—one individual on April 5 and two on April 6. We saw it a few times at El Fénix.

Two of our specimens seem quite aberrant. They are closest to *eburneirostris*, but the ventral and dorsal spots and the throat lack the strong buffy tinge of those of *eburneirostris*, while the dark borders of the spots are much blacker than in that subspecies. Thus, in coloration they are blacker than any of the known subspecies. In large bill size the April specimen approaches *flavigaster*, but the bill of the August specimen is small and very dark. A male from Prusia, Chiapas, is close to our dark birds but is slightly buffier and quite small-billed, while a female from Prusia appears to be good *eburneirostris*, as does one of ours.

Xiphorhynchus erythropygius erythropygius. Spotted Woodhewer. 3♂♂, 1♂ im., 5♀♀, 1♀ im.,

April 6–August 11. The call of this species was a drawn out, piercing whistle, sliding down two tones in pitch. In August we saw small groups in the humid forest at El Fénix.

Lepidocolaptes affinis affinis. Spotted-crowned Woodhewer. 5♂, 1♂ im., 4♀, August 2–11. This was the most common woodhewer in the pine-oak woods and the humid forest at El Fénix in August.

Anabacerthia striaticollis variegaticeps. Scaly-throated Tree-hunter. 2♂, 1♂ (?), 1♀, April 5–August 11. We saw this bird infrequently in the humid forest at La División and El Fénix. The birds fed near the ends of the small branches most of the time, occasionally even hanging upside down.



Fig. 7. Nest and egg of Scaled Antpitta on a fallen log.

Sclerurus mexicanus mexicanus. Tawny-throated Leaf-scraper. 1♂, 1♀, 1♀ im., August 2–11. We saw this species infrequently at El Fénix, in the moist ravines. Its call was a sharp clear whistle. It apparently has been recorded previously from Chiapas only by Berlioz (1939:366) at Santa Rosa.

Thamnophilus doliatus intermedius. Barred Ant-Shrike. 1♂, April 6. Our specimen is pale below and tends toward *pacificus* in having very wide white stripes dorsally.

Grallaria guatimalensis guatimalensis. Scaled Antpitta. 2♂, 1♀, August 5–11. We saw this species rarely in the thick undergrowth at El Fénix. While cutting a trail through a thicket, Edwards found a nest on August 9. It was located near a small stream in a flat, overgrown parklike area between two sections of the rain forest. The nest was built on a nearly horizontal dead log which had fallen across a trail. It was in a small cleared niche in the tangle of undergrowth just two feet from where the old trail crossed the log. The nest was cup-shaped, supported principally by the log, but partly also by the entwined branches of shrubs which grew around it. It was composed of small sticks, dry pine needles, moss and dead leaves, with a partial lining of dead leaves and pine needles (fig. 7). The nest measured: outside diameter, 165 to 190 mm.; inside diameter, 100 to 115 mm.; depth of cup, 50 to 75 mm.; outside depth, 85 to 100 mm.; distance above ground, one meter. The nest contained a single pale blue, blunt-ended, slightly glossy egg.

Lea watched the female bird incubate. It approached the nest with extreme caution, like a rail, moving carefully down the log from the thicket to a position beside the nest. It then stepped up on the sides of the nest, straddled the egg, nestled down upon it, and then remained motionless. When flushed, it jumped back into the shrubbery, moved swiftly to the ground and disappeared along the stream. It made no sound. The female collected at this nest had in its oviduct a shelled egg, which was pale dull blue, and measured 26 by 35 mm. The gizzard of this bird contained a dragonfly and a roundworm.

Judging from the material in the Chicago Museum and National Museum collections, the supposed subspecies *guatimalensis* and *mexicanus* might possibly be separable, but because of the great individual variation we prefer to combine them as did Griscom (1932). Our birds match good series of *guatimalensis*, being considerably darker below than *ochraceiventris*.

Tityra semifasciata personata. Masked Tityra. 2♂♂, 2♂♂ im., March 31-August 5. We saw this species occasionally in a variety of habitats on the plateau and in the humid forests at La División and El Félix, in groups of as many as four. In March and April we sometimes saw them chasing each other and once we saw one attack and drive off a *Pitangus sulphuratus*, but we found no nests. An *Accipiter chionogaster* taken at El Félix carried a dead immature Tityra in its talons. The two adult males agree with a good series of *personata* from Chiapas, Campeche, and Guatemala. One of the immature males appears slightly closer to *griseiceps*.

Pyrocephalus rubinus. Vermilion Flycatcher. 3♂♂, 1♂ im., April 2-July 25. Noted only three times on the plateau in the spring and infrequently in July. The April specimen seems to have been a vagrant of the subspecies *flammeus*. It has the characteristic warm orange breast color of *flammeus* but the under tail coverts are pale pink like those of *blatteus*. The three July birds are clearly *blatteus*.

Muscivora forficata. Scissor-tailed Flycatcher. 1♂, March 30. During the spring individuals of this species often congregated in loose groups of a dozen or more in the open plateau country, perching near the tops of the *Acacia* trees and occasionally bickering with *Tyrannus melancholicus*. We saw none during July and August.

Tyrannus melancholicus chloronotus. Tropical Kingbird. 6♂♂, March 31-August 17. This was the most conspicuous flycatcher of the dry fields, frequenting the scattered mesquite growth on the plateau. The birds were noisy and petulant. On July 26 a flimsy nest situated precariously on a thin outer branch of an *Acacia* contained a single young bird.

Our specimens are much darker than *occidentalis* and are smaller and have blacker wings and tails than *couchii*. The spring male agrees with a large series of *chloronotus* from Chiapas in its darker tail, darker exposed portion of the primaries and smaller size. It differs from *occidentalis* in having much more intense yellow underparts, although the throat is as white as any of the specimens of the western race at hand.

Myiodynastes luteiventris luteiventris. Sulphur-bellied Flycatcher. 2♂♂, 1♂ im., 3♀♀, July 15-23. We found this species to be common in July along the watercourses on the plateau, where the birds moved about in family groups. We saw it occasionally in the deciduous forest at El Félix in August. Our specimens agree with a large series of the nominate subspecies. This series has variants which are paler than a topotypical specimen of the doubtful subspecies *swarthy*.

Megarynchus pitangua mexicanus. Boat-billed Flycatcher. 2♂♂, 1(sex?) im., 4♀♀, March 30-August 16. We found this species to be fairly common in July along the streams on the plateau. A March specimen with sooty black pileum and greenish-olive back agrees with a series of *mexicanus* from Chiapas and Yucatán. The summer birds fall among the pale extremes of a large series of *mexicanus*.

Myiozetetes similis texensis. Social Flycatcher. 3♂♂ im., 4♀♀, March 29-August 17. Whenever we approached the rivers on the plateau we encountered this querulous, nervous flycatcher. A new nest was found on April 2. We assign our specimens to *texensis*, although they are somewhat grayer than any comparable material at hand in the Chicago Museum.

Pitangus sulphuratus. Derby Flycatcher. 1♂, 3♀♀, 2♀♀ im., March 26-August 16. Along the rivers on the plateau this was the most conspicuous bird. It outnumbered *Myiozetetes similis*, with which it was closely associated, and it was more prominent because of its larger size and louder calls. In the spring it was considerably more numerous than *Megarynchus pitangua*, but we found the two species in about equal numbers in July and August. Edwards observed one carrying material to a partially completed nest on April 1.

All of our summer birds, including immature and breeding birds, have the dark olivaceous color of *guatimalensis* dorsally, but the March female shows some pale new feathers in the back plumage indicating it is close to *derbianus*. All tend toward *derbianus* in large size.

Myiarchus nuttingi. Nutting Flycatcher. 1 ♂, 2 ♀ ♀, 1 ♀ im., 1 (sex?) im., March 26–July 21. We saw it in small numbers almost daily in the spring and summer, generally in the sparse mesquite growth along the rivers. A family group frequently fed near our camp on the Río Monserrate in July.

Even after extensive comparisons and intensive study of this species, the taxonomic situation is not entirely clear to us. In working over our specimens we have been influenced strongly by Griscom's (1934:387ff) analysis of the species. The breeding birds of Monserrate appear to be closest to *inquietus*, the male tending toward *flavidior* in size. The female of March 26, presumably a transient, is intermediate between *inquietus* and *M. cinerascens*, but is somewhat closer to the latter.

Myiarchus tyrannulus. Mexican Crested Flycatcher. 1 ♂, 1 ♂ im., July 13, 14. We saw this species infrequently on the plateau in July. The adult is intermediate between *nelsoni* and *magister*.

Myiarchus tuberculifer lawrencei. Querulous Flycatcher. 5 ♂ ♂, 2 ♀ ♀, April 5–August 16. We saw this bird occasionally at El Fénix and La División, where it preferred the pine woods on the ridges. Individuals appeared occasionally on the plateau in mid-August. Three of our male specimens are *lawrencei*, while the male of August 16 and the female of April 5 are closer to *connectens* in size.

Nuttallornis borealis. Olive-sided Flycatcher. 1 ♀, August 16. Apparently this specimen is the first for Chiapas.

Contopus virens. Wood Pewee. 2 ♂ ♂, 3 ♀ ♀, 3 ♂ ♂ im., 1 (sex?) im., July 15–August 16. We did not record this species in the spring. In July and August it was common in open country and along the water courses on the plateau, where the birds moved about in family groups calling frequently. The resident subspecies, judging from the July specimens, is *sordidulus*. The August specimens appear to be *richardsonii* on the basis of size, and apparently are transients.

Contopus pertinax. Coues Flycatcher. 5 ♂ ♂, 2 ♀ ♀, August 2–10. Common in the pine and pine-oak woods at El Fénix in August. The birds frequently gave short scolding notes, but we never heard them call. We consider this population intermediate between *pertinax* and *minor*, most of our specimens being closer to *pertinax* in size.

Empidonax flaviventris. Yellow-bellied Flycatcher. 2 ♂ ♂, August 15. These two specimens, taken along the Río Grande, show a confusing combination of characters, but they appear to us to belong to this species.

Empidonax traillii traillii. Traill Flycatcher. 1 ♀, August 17.

Empidonax minimus. Least Flycatcher. 4 ♂ ♂, 3 ♀ ♀, March 25–August 16. This species seemed to be the most numerous of the transient empidonaces.

Empidonax flavescens dwighti. Yellowish Flycatcher. 3 ♂ ♂, August 3–9. We noted this species infrequently in the deciduous forest at El Fénix.

Tolmomyias sulphurescens cinereiceps. Sulphury Flat-bill. 1 ♂, 1 ♀, 1 ♂ im., 1 ♀ im., August 3–15. The irides of the adults were white, whereas those of the young were dark gray.

Rhynchocyclus brevirostris brevirostris. Eye-ringed Flat-bill. 3 ♂ ♂, 3 ♀ ♀, 1 ♀ im., April 5–August 11. We saw this flycatcher occasionally in the humid forest at El Fénix and La División. They moved about in small groups, occasionally voicing a very high-pitched *weess*.

Campstostoma imberbe. Beardless Flycatcher. 1 ♂, 1 ♂ (?), 2 ♀ ♀, 1 jv. (sex?), July 13–16. We saw and heard this species frequently in the dry mesquite areas on the plateau and at the laguna in July. We saw a single bird in the pine woods near El Fénix on August 7. The subspecies *ridgwayi* seems untenable.

Calocitta formosa pomporta. Magpie-jay. 2 ♂ ♂, 3 ♀ ♀, April 1–July 23. This jay was common along the small streams and adjacent dry slopes on the plateau, often ranging a considerable distance away from water. In the spring many birds were paired. On March 26 Lea found a nest, probably of this species, on a tree branch overhanging the river, but no egg-laying was noted through April 6. In the summer we saw family groups and noted the great variety of call notes. Some calls were similar to those of *Crotophaga sulcirostris*. Our specimens belong to the Central American subspecies, which we believe should include the tenuous form *impudens*.

Xanthoura yncas vividula. Green Jay. 3 ♂ ♂, 2 ♂ ♂ im., 2 ♀ ♀, 1 ♀ im., 1 (sex?) im., March 30–August 8. This species was common in the humid forests at La División and El Fénix in spring and summer. It was rare on the plateau where Edwards saw it on March 30 and July 23.

We have previously described the irides of *vivida* as bright yellow (Lea and Edwards, 1949:44). The adult birds from Chiapas had yellow irides, but the young male taken on August 5 had cloudy, pale yellowish brown irides and the immature bird collected on August 2 had brown irides with a very faint yellowish tinge.

Thryothorus pleurostictus acaciarum. Banded Wren. 7♂♂, 1♂ (?), 1♀, 1♀ nestling, March 25-August 16. In the spring we frequently saw well constructed retort-shaped nests made of what appeared to be seed stalks of small grasses, placed from four to six feet above the ground in *Acacia*.



Fig. 8. Nest of Banded Wren.

On March 31 Edwards saw a bird of this species at work on one of these nests. It made several trips to the nest, adding pieces of grass to the portion around the opening while the observer sat in plain view about 20 feet away. None of the nests that we examined contained eggs, but all appeared to be new.

This was the only species actively nesting in large numbers in July and August. We found many nests, some under construction, some with eggs and some with young. They were almost always on the edge of dense growth near a stream. The highest nest was about 20 feet above the ground, while most of them were less than 10 feet above ground, and a few were only about four feet up. In general there were two situations in which the nests were placed. Most often the nest was to be found in a small, thorny, ant-infested *Acacia*, close to the trunk. In these bulky, shaggy nests the entrance was a nearly horizontal tunnel. Less often we found the nest of *Thryothorus pleurostictus* built in pendant fashion near the end of a lower branch of a large tree. These nests were less bulky and more securely woven than the horizontal type, and they were more nearly retort shaped. They were similar to the nests of *Uropsila leucogastra* (Sutton, 1948), although not as compactly constructed and not having the entrance tunnel as tightly adherent to the nest body. The pendant nests were almost always close to and distal to a hornet's nest.

One of the horizontal nests which we watched closely from July 18 to 28 was a loosely made structure composed almost entirely of grasses (fig. 8). It was approximately twelve inches long and

eight inches high in its maximum external dimensions. The tunnel was neatly made and led slightly upward for about four inches to the top of the nest cavity. The nest was supported by three small branches, one at the base of the tunnel, one entwined in the body of the nest, and one through the superstructure. Crowded into the unlined cavity of the nest were six nestlings. Both of the adults were active in feeding small moths and insect larvae to the young. When entering, the adults flew into the tunnel without pausing at the entrance. Neither did they pause when emerging. When under observation, they scolded almost constantly when not gathering food. Three fledglings left the nest on July 26 and the other three left the following day.

We heard these birds singing daily in March, April, July, and August. The song was forceful and extremely varied. Some phrases were similar to those of a canary but lower in pitch and louder.

Troglodytes musculus intermedius. Tropical House Wren. 1 ♀, 4 ♂♂ im., 2 ♀♀ im., 2 (sex?), August 2-7. We saw this species frequently in the undergrowth in the pine-oak woods near El Fénix in August. It sang occasionally. Our specimens are slightly paler above and below than a small series of *intermedius* from Guatemala and Honduras in the Chicago Museum collection.

Henicorhina leucosticta prostheleuca. White-breasted Wood Wren. 1 ♂, 2 ♂♂ im., 1 ♀ im., 2 im. (sex?), August 2-9. Common, inquisitive and noisy in the deciduous forest at El Fénix in March and August.

Mimus gilvus gracilis. Tropical Mockingbird. 2 ♀♀, July 13-26. We saw this bird frequently along the roads and in the open mesquite ranges on the plateau. We noted its song occasionally in the spring and summer. The specimens are in much worn and discolored plumage, so their subspecific placement is provisional.

Turdus assimilis. White-throated Robin. 1 ♀ im., 1 im. (sex?), August 2-6. We saw small flocks of adults and young in the deciduous forest at El Fénix in August. Our material is not adequate for subspecific identification.

Turdus grayi grayi. Clay-colored Robin. 3 ♀♀, 4 ♀♀ im., 1 ♂ jv., March 30-August 11. In March and April we found this bird to be almost entirely confined to the heavy tree growth along the streams on the plateau. It was shy and quite inconspicuous in voice and action as well as color. The only sounds we heard it make were single *chucks* or a rapid series of *clucks* which seemed to be scold notes. In the summer we saw it in small numbers each day in the dense woods along the streams on the plateau and in the deciduous forest at El Fénix.

Myadestes obscurus oberholseri. Brown-backed Solitaire. 2 ♂♂, 2 ♀♀, 4 ♂♂ im., 1 ♀ im., April 5-August 8. Fairly common in the pine-oak woods and deciduous forests at La División and El Fénix in spring and summer. In August there were many immature birds in groups at El Fénix. We frequently noted their incomplete, atypical songs. Our two adult specimens are small and substantiate the belief of the describers (Dickey and van Rossem, 1925:133) that the range of *oberholseri* might extend into Chiapas.

Myadestes unicolor unicolor. Slate-colored Solitaire. 1 ♂, 1 ♂ im., August 5-11. We noted this species in dense forest at El Fénix on August 2, 5, 6 and 11. We rarely heard it sing. The remiges of our specimens have the slate gray edgings characteristic of the nominate race.

Catharus mexicanus mexicanus. Black-headed Nightingale-Thrush. 7 ♂♂, 2 ♀♀, 1 ♂ im., April 5-August 11. We saw this shy thrush frequently in the high deciduous forests in April and August. At La División on April 5 the birds uttered only a low *chuck* call-note very much like that of *Hylocichla guttata*. In August they were nesting, and singing persistently. Our specimens average slightly darker than Veracruz specimens of *mexicanus*, thus showing a tendency toward *cantator*.

Polioptila caerulea deppei. Blue-gray Gnatcatcher. 1 ♀, April 2. One was seen in the mesquite on April 1, also.

Polioptila alboloris vanrossemi. White-lored Gnatcatcher. 6 ♂♂, 5 ♀♀, 2 ♂♂ im., 1 ♀ im., March 31-August 10. Almost daily we saw several of these birds in the mesquite or in sparse riverside cover. They were paired in the spring and in July. They sang occasionally in July, but we noted no songs in March or April. We watched the birds carefully in the field in late March, April, and July and observed that no males had white superciliary stripes. In contrast, all females that we scrutinized carefully had at least partial white superciliary lines and some white above and behind the posterior angle of the eye. Our female specimens show variations from white to grayish lores, the color often not being the same on both sides of an individual.

Cyclarhis gujanensis flaviventris. Rufous-browed Pepper Shrike. 5 ♂♂, 3 ♀♀, March 29-Aug-

ust 16. We saw this species occasionally at the laguna and along the streams on the plateau in spring and summer. Individuals sang frequently in both seasons, and at such times they were perched in the upper branches of trees 30 to 60 feet high. When they were not singing, we found them moving about in low, thick shrubbery or feeding acrobatically in fruiting trees. Any one individual kept to its own song pattern consistently, but there was great variation between the songs of different individuals. It was always a loud, clear song, the tone quality resembling that of the songs of the members of the genus *Seiurus*.

Vireo solitarius. Solitary Vireo. 1 ♀, March 26; 1 ♂, 1 (sex?), August 17. These two August specimens were collected in the pine-oak woods. Two others were heard on August 9 and 10. These specimens have the wing formula and large size of *montanus*, as do two from Escuintla, Chiapas, in the Chicago Museum collection. The breeding of the species in Chiapas and the occurrence of this subspecies in México apparently have not been recorded previously.

We saw individuals that presumably were transients of this species occasionally in the trees along the streams on the plateau and at the laguna in March and April. The March specimen is of the race *V. s. solitarius*.

Vireo gilvus gilvus. Warbling Vireo. 1 ♀, March 30. We saw one or two along the rivers on the plateau on March 30 and April 1 and 2.

Mniotilla varia. Black-and-white Warbler. 3 ♂♂, 2 ♀♀, March 28–August 10. This species was a rare transient in late March, when we saw only two individuals on the plateau. In August we saw it frequently in the pine-oak woods near El Fénix.

Dendroica auduboni. Audubon Warbler. 1 ♀, April 3. In the last week of March we saw only one, but on April 3 we recorded three more. All were in winter plumage. We did not see this species in July and August. The specimen is close to the borderline in size (wing 73 mm.) between *auduboni* and *memorabilis*.

Dendroica virens virens. Black-throated Green Warbler. 1 ♂, 1 ♀, March 29–April 2. This was the most common transient warbler in the area during late March and early April. We saw it frequently in the willows at the laguna. All individuals that we observed closely were in mixed plumage.

Dendroica chrysoparia. Golden-cheeked Warbler. 1 ♂, 1 ♂ im., August 9–11. Noted rarely in groups of two or three in the deciduous forest and pine-oak woods near El Fénix in August. The species has apparently not been recorded previously from Chiapas.

Dendroica graciae ornata. Grace Warbler. 2 ♂♂, 5 ♀♀, 1 ♀ im., 1 (sex?), July 15–August 7. We saw this species occasionally in the open pine woods on the plateau and frequently in the pine-oak woodland near El Fénix. Our specimens are heavier-billed and much purer gray (less brown) above than *graciae*, but they do not appear to be more heavily streaked. They are longer-winged and have less yellow on the underparts than *decora*.

Seiurus motacilla. Louisiana Water-thrush. 3 ♀♀, 2 ♂♂ im., July 21–August 8. At El Fénix in August we noted one or two individuals daily along the small mountain streams.

Oporornis tolmiei. Macgillivray Warbler. 1 ♂ (?), March 29. Noted occasionally in low brushy growth near water in March and April.

Chamaetypis poliocephala palpebralis. Ground Chat. 6 ♂♂, 1 ♂ im., 1 ♀ im., 1 ♀ juv., March 29–August 3. We noted this species occasionally in the dry grassy fields on the plateau, and we located the territories of pairs in the spring. They were shy and secretive when approached closely. However, from a distance they could be located readily by their unusual call notes and song. In July we found them to be common in low willow thickets at the laguna and in the fields of tall grass.

The spring male has prominent yellow and white markings on the upper and lower eyelids and is quite long-tailed. In the summer series the whitish markings above and below the eye are not always clearly evident, but all have at least a trace of white. On the basis of the white markings and the very long tails of all the specimens we place them with the northern subspecies.

Icteria virens virens. Yellow-breasted Chat. 1 ♀, March 29. Noted only in the spring when we saw a few individuals from March 29 to April 2 near streams on the plateau.

Wilsonia pusilla pileolata. Pileolated Warbler. 1 ♀, April 6. Taken in the humid forest at La División.

Setophaga picta guatemalae. Painted Redstart. 2 ♂♂, 1 ♂ im., 2 ♀♀, 1 (sex?), August 2–7. We saw a single bird among the open pines of the lower mountain slopes on March 27 and found the

species to be common in the pine-oak woods near El Fénix in August. Our specimens are considerably closer to *guatamalae* than to *picta*, having little or no white on the third rectrix and little white on the edgings of the tertials.

Myioborus miniatus intermedius. Slate-throated Redstart. 2♂♂, 2♀♀, 1♂ im., 2♀♀ im., March 27-August 11. We found this species to be the most abundant warbler, excepting *Basileuterus culicivorus*, in the humid forests at La División and El Fénix in the spring and summer. In April we frequently heard two or three males singing at one time. Most of our specimens fit readily with *intermedius*. Two with slightly more orange bellies tend toward *hellmayri*.

Euthlypis lachrymosa. Fan-tailed Warbler. 2♀♀, August 11. Noted only on August 11 in humid forest at El Fénix. After comparing a large number of specimens in the Michigan Museum and Chicago Museum, we agree with those who synonymize all the supposed subspecies.

Basileuterus culicivorus culicivorus. Golden-crowned Warbler. 3♂♂, 1♀, 1 (sex?), 1♀ jv., 4 im. (sex?), March 27-August 6. This was the most common warbler in the humid forests at La División and El Fénix, but we did not hear its song as frequently as we did that of *Myioborus miniatus*.

Basileuterus rufifrons rufifrons. Rufous-capped Warbler. 4♂♂, 2♂♂ im., 1♀ im., 3 (sex?) im., April 5-August 7. Edwards collected a breeding male in the scorched weeds just south of La División on April 5. In August we noted the species frequently both in the humid forest and the pine-oak woods at El Fénix.

Cassiculus melanicterus. Mexican Cacique. 5♂♂, 1♂ im., 2♀♀, March 26-August 16. This spectacular bird was fairly common along the streams on the plateau. In March and April individuals flew about in loose groups. They made a variety of strange noises, some of them quite similar to the twig snapping and swishing sounds of *Cassidix mexicanus*. In July and August we often saw noisy mixed flocks of immature and adult birds in the dense growth along the rivers, and we found some occupied nests.

The nests were tightly woven, pendant structures, approximately 18 to 30 inches long. They were on the ends of branches overhanging the rivers, about 25 to 50 feet above the water. The high nests were sometimes conspicuously located, but we never found them in cleared, open areas like the nests of some of the orioles in the region. The lower nests were usually concealed in dense growth. We sometimes found as many as three or four nests in one group of trees, but the species was not nearly so markedly colonial as is *Gymnostinops montezuma*.

One nest that we studied was built in a *Ficus* about 25 feet above the "two-mile river." The entrance at the top of the pendant structure was partly concealed by leaves on the twigs that supported the nest. It contained young birds. During a period of about eight hours on July 22 and 23, only the female came to the nest. This bird was silent as it flew to the nest and darted in with only a momentary pause at the entrance. It remained inside the nest for periods lasting from 30 seconds to several minutes. The nestlings often chattered while the adult was in the nest. The adult left the nest silently, never pausing at the entrance to survey the nest area. The intervals between feedings usually were 20 to 30 minutes.

Virginia Lea found a very young bird on the ground, unable to fly. When she attempted to catch it, the nestling squawked loudly and stirred up a commotion among a group of adult caciques in the trees overhead. Five adult birds in succession attacked her when she was near the nestling, swooping down at her with loud cries and noisy flapping of wings. When she picked up the nestling the adults intensified their protests, two of them actually striking her on the head with their bills.

This species was well known to the people at the hacienda, as much for its peculiar and offensive odor as for its brilliant yellow and black plumage. We could sense the strong musky odor of the bird when holding it in the hand, and even after several months as a prepared specimen the skin retained the scent.

Tangaricus aeneus. Red-eyed Cowbird. 1♀, 1♀ im., July 21. We saw this species in small numbers almost daily on the plateau in spring and summer, particularly around the corrals and ranch buildings at Monserrate. The breeding female appears to be in mixed immature and adult plumage and we are unable to place it subspecifically.

Cassidix mexicanus mexicanus. Boat-tailed Grackle. 1♂, 1♂ im., April 2-July 25. Around the houses and farmyards this was an abundant and conspicuous bird. We saw birds carrying nesting material in early April; they were nesting and roosting in thickly leaved trees around the ranch house. A breeding male specimen (wing 205 mm.) is large even for *mexicanus*.

Icterus spurius. Orchard Oriole. 1 ♂, April 2. We saw several of both sexes in late March and early April, always near the streams on the plateau.

Icterus wagleri wagleri. Wagler Oriole. 1 ♀ im., April 1. Lea collected the specimen along the Río Monserrate. We saw an adult on the plateau in early August.

Icterus chrysater chrysater. Lesson Oriole. 4 ♂♂, 2 ♂♂ im., 1 (sex?), August 2-11. Common at El Fénix where we saw small flocks in the pine, pine-oak, and deciduous forests. Two of the adult males have black covering most of the crown, as in specimens which were once designated as *I. gularis*.

Icterus gularis gularis. Black-throated Oriole. 2 ♂♂, 1 ♀, July 18-August 15. In July and August we saw this oriole occasionally in small family groups along the watercourses on the plateau. In size the specimens tend somewhat toward the smaller *troglodytes*.

Icterus pustulatus formosus. Streak-backed Oriole. 2 ♂♂, 6 ♀♀, March 25-August 16. The common oriole on the plateau. We found this species in small flocks near the watercourses in the spring. The birds were not singing, but we did note them scolding, calling, and chasing one another. At that time they had not begun nest construction. In July and August there were many family groups with young birds. There were a few active nests of this species along the rivers, and also many nests no longer in use at this time. The nests were usually placed in conspicuous locations in the smaller trees about 15 to 25 feet above the ground. They were short-necked, rather flimsy, pendant structures, approximately 12 inches long.

Sturnella magna alticola. Eastern Meadowlark. 1 ♂, 3 ♀♀, 1 jv. (sex?), April 3-July 17. We saw about six during our two weeks in Chiapas in March and April. In July the species was abundant in the same areas and was obviously breeding. We assign our specimens to *alticola* as defined by Griscom (1934:390).

Tanagra affinis affinis. Lesson Euphonia. 1 ♂, 2 ♀♀, July 18. We saw a group on July 18 and July 26 in the mesquite fields.

Piranga rubra rubra. Summer Tanager. 1 ♂, March 30. We saw only a few, along the rivers on the plateau in March. The specimen is in mixed red and yellowish plumage. It is typical of *rubra* in its small size.

Piranga flava dextra. Hepatic Tanager. 9 ♂♂, 6 ♀♀, 1 ♂ im., 1 (sex?), March 27-August 9. In the spring we recorded this species frequently in the heavy growth along the streams, in the sparsely wooded pine ridges on the plateau and in the dense forest at La División and El Fénix. One male taken on April 2 was colored much like a female but was somewhat more orange on the throat and top of the head. It had been singing persistently and its testes were slightly enlarged. Some of these tanagers flew about in pairs in March.

Our spring specimens match a small series of supposed *dextra* in the Michigan Museum in coloration. But in view of the worn condition of most of our specimens and the difficulty of separating the subspecies even in fresh material, assignment of the Monserrate population to *dextra* is only provisional.

Piranga leucoptera leucoptera. White-winged Tanager. 1 ♀, March 27. An adult male and female together in the humid forest constituted our only record.

Chlorospingus ophthalmicus ophthalmicus. Brown-capped Chlorospingus. 2 ♂♂, 1 ♂ im., 3 ♀♀, 6 ♀♀ im., 1 im. (sex?), April 5-August 9. We found this species to be common in the humid forests at La División and El Fénix. The birds often chased each other in the thick undergrowth while making a chatter of rapidly repeated sibilant notes. Their songs and call notes were quite high-pitched also. We frequently saw flocks moving about in the tops of the trees at El Fénix.

Our adult specimens are readily separable from a large series of *postocularis* in being distinctly browner (not slaty) on the forehead, crown, nape and auriculars. The subspecies *ophthalmicus* has not been previously recorded from Chiapas.

Saltator atriceps peeti. Black-headed Saltator. 1 ♂, 3 ♀♀, 1 ♀ im., March 31-August 15. In heavy growth near the streams on the plateau we found *Saltator atriceps* in small numbers in spring and summer. Its loud staccato calls betrayed its presence.

Our adult female specimens are closest to *peeti*, being even larger than any of the series which Brodkorb (1940:548) examined in describing the subspecies. The wing of the male specimen, which may not be fully adult, is below the size range of *peeti*, but the bird is quite long-tailed. We consider our birds to be extreme examples of *peeti*, extending the range of that subspecies to the Atlantic side

of the Continental Divide, about 40 miles northwest of the previously defined westerly limit of its range at Tonalá.

Pheucticus ludovicianus. Rose-breasted Grosbeak. 1 ♀, March 31. We saw this species only on the last two days of March; first a flock of four and again a single bird were noted.

Guiraca caerulea eurhyncha. Blue Grosbeak. 1 ♂ im., 1 ♀, July 16–24. In the spring this species occurred in small flocks on the plateau with *Passerina cyanea*. In July we saw one or two of these shy birds almost daily in the same areas and occasionally we heard them sing.

Passerina cyanea. Indigo Bunting. 1 ♂, March 26. In the mesquite-grown fields we often encountered flocks of this species near, or mixed with, small flocks of *Guiraca caerulea*, from March 26 to April 1.

Passerina ciris pallidior. Painted Bunting. 1 ♂, April 6. Lea collected this male in breeding plumage from a group in low brush at La División. We place it with *pallidior* primarily on the basis of its large size.

Volatinia jacarina splendens. Blue-black Grassquit. 4 ♂ ♂, 1 ♀, July 22–26. We occasionally saw females, singing males, and fledglings in moist fields on the plateau in July. Virginia Lea watched a male bird engaging in an excited courtship performance atop a corn stalk. Without actually leaving the perch the tiny bird bounced vigorously up and down with flapping wings, uttering a strained, shrill buzzy note at each upward bounce.

Spinus notatus notatus. Black-headed Siskin. 4 ♂ ♂, 3 ♂ ♂ im., 1 ♀, July 15–August 5. We noted flocks occasionally in the open pine woods on the plateau in July and very often in the pine-oak woods near El Fénix in August; both immatures and singing adult males were in the same groups. Our specimens show the rich golden tone of the nominate subspecies.

Loxia curvirostra mesamericana. Red Crossbill. 3 ♂ ♂, 1 ♂ im., 2 ♀ ♀, 1 ♀ im., August 3–9. We often saw flocks feeding in the pine woods near El Fénix in August, and on one occasion, August 3, heard a male sing. Subspecific placement is on the basis of the small size of our specimens. Two red males, perhaps not in fully adult plumage, do not show the supposed dark coloration of *mesamericana*. The situation seems to be similar to what Griscom (1937) found when he described the few known Guatemala males as *mesamericana* in size and more like *stricklandi* in color.

Atlapetes brunnei-nucha brunnei-nucha. Chestnut-capped Atlapetes. 2 ♀ ♀, 1 ♂ im., 2 ♀ ♀ im., August 7–11. We noted this species in the dense forest on the highest slopes at El Fénix.

Ammodramus savannarum perpallidus. Grasshopper Sparrow. 1 ♀, April 3. This specimen is intermediate between *pratensis* and *perpallidus*; it is similar to the former in darker, less buffy coloration above and slightly smaller size, but it is placed with the latter because of its slender bill.

Aimophila ruficauda lawrencii. Russet-tailed Sparrow. 1 ♂, 4 ♀ ♀, 1 (sex?), March 25–July 17. We saw this sparrow almost daily on the plateau in March, April, and July. Its common call note was extremely high pitched. Our specimens, with gray backs and gray-brown tails, are well-marked examples of *lawrencii*.

Aimophila rufescens rufescens. Rusty Sparrow. 2 ♂ ♂, 3 ♀ ♀, 1 ♂ im., 3 ♀ ♀ im., 1 im. (sex?), April 6–August 7. We saw this sparrow occasionally at La División in April and very often near El Fénix in August. It was the common sparrow in the thick brush in the pine-oak woods. Our worn specimens are close to comparable *rufescens*. One female shows a slight tendency toward *gigas* in length of tail (73 mm.). Our April specimen is much buffier below and much darker and more heavily streaked above than topotypes of *cinerea* from near this locality.

Aimophila botterii. Botteri Sparrow. 2 ♂ ♂, 1 ♂ im., July 15–19. In the grassy upland fields on the plateau we saw this bird occasionally in July. We heard it sing occasionally.

Our specimens are intermediate between *A. b. botterii* and *A. (botterii) petenica*, although closer to the former, which they match in size. They are much grayer above than comparable material from Arizona, Texas, Sonora, and Tamaulipas and the chestnut edgings of the central black shaft streaks on the back are darker. They do not have the dusky lores of *petenica*, nor do the back feathers show such broad black shaft streaks with such dark edgings. However, they do help to bridge the gap between *botterii* and *petenica*. Two August specimens in the Chicago Museum from Ocosingo, Chiapas, are even closer to *petenica* in back coloration, even though they are in quite worn plumage.

Spizella passerina mexicana. Chipping Sparrow. 1 ♂, 4 ♀ ♀, 1 ♀ im., July 25–August 10. We saw small flocks in July and August in the open pine woods on the plateau and in the pine-oak woods near El Fénix.

Melospiza lincolni lincolni. Lincoln Sparrow. 1♀, March 29. We saw four on the plateau during the last three days of March.

LITERATURE CITED

- Bangs, O., and Peters, J. L.
1928. A collection of birds from Oaxaca. Bull. Mus. Comp. Zool., 68:385-404.
- Beecher, W.
1950. Convergent evolution in the American orioles. Wilson Bull., 62:51-86.
- Berlitz, J.
1939. Etude d'une collection d'oiseaux du Chiapas (Mexique). Bull. Mus. Hist. Nat. Paris, ser. 2, 11:360-377.
- Brodkorb, P.
1940. New birds from southern Mexico. Auk, 57:542-549.
- Dickey, D. R., and van Rossem, A. J.
1925. Four new birds from Salvador. Proc. Biol. Soc. Wash., 38:133-136.
- Griscom, L.
1932. Distribution of bird life in Guatemala. Bull. Amer. Mus. Nat. Hist., 64:439 pp.
1934. The ornithology of Guerrero, Mexico. Bull. Mus. Comp. Zool., 75:367-422.
1937. A monographic study of the red crossbill. Proc. Bost. Soc. Nat. Hist., 41:77-210.
- Hellmayr, C. E., and Conover, B.
1949. Catalogue of birds of the Americas. Field Mus. Nat. Hist., Zool. Ser., 13, pt. 1, no. 4:1-358.
- Lea, R. B., and Edwards, E. P.
1949. Eye-color of the green jay in Mexico. Condor, 51:44.
- Moore, R. T.
1934. A review of the races of *Geococcyx velox*. Trans. San Diego Soc. Nat. Hist., 7:455-470.
1940. Notes on Middle American empidonaces. Auk, 57:349-389.
- van Rossem, A. J.
1938. Descriptions of two new races of the ground cuckoo (*Morococcyx erythropygus* [Lesson]) from Mexico. Proc. Biol. Soc. Wash., 51:169-171.

Amherst, Virginia, and New Orleans, Louisiana, May 4, 1954.