

NOTES ON THE BIRDS OF THE HACIENDA MONSERRATE, CHIAPAS, MEXICO¹

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The Lea-Edwards Expedition visited the Hacienda Monserrate in the state of Chiapas during the spring of 1947, as part of an ornithological study of several localities in Mexico. We camped near the ranch house from March 24 to April 7, observing and collecting birds in a variety of habitats within a few miles of the ranch house.

This extensive hacienda, or ranch, owned by Javier del Piño E. and managed by his brother Don Jaime del Piño E., is situated in the district of Cintalapa among the mountains of southwestern Chiapas. It is approximately eight miles east of the Oaxaca-Chiapas border and about thirty miles north of the Pacific Ocean. By highway it is nearly forty miles north-

1. Contribution from the University of Michigan Biological Station.

We are grateful to Don Jaime del Piño E. for the courtesy he extended to us at the Hacienda Monserrate. For the use of the excellent comparative material provided by Dr. Josselyn Van Tyne at the University of Michigan Museum of Zoology we are much obliged. Dr. Pierce Brodkorb advised us on the work in Chiapas and made valuable suggestions on the preparation of this report. And we thank Dr. George M. Sutton for aid and counsel through the many phases of the expedition. The Chicago Natural History Museum and the Biological Station made their facilities available to us. We acknowledge the courtesy of the Dirección General Forestal y de Caza (Ing. Luis Macías) in providing the permits we used in Mexico.

west of Arriaga, which is situated on the coastal plain about ten miles from the ocean.

The main house, ranch buildings, corrals and homes of the workers on the hacienda are communally located on a sort of plateau, which, though rolling and deeply cut by streams, extends for about fifteen miles to the south and a considerable distance to the east with little change in elevation. This comparatively flat land we call the Monserrate plateau. At the ranch house it reaches an elevation of approximately 3600 feet. To the west and north of the ranch house, mountains rise steeply in nearly parallel ridges to an estimated elevation of 6000 feet. The continental divide is, however, to the south; water draining from the vicinity of Monserrate flows into the Río Cintalapa (and thence into the Río de la Venta and Río Grijalva), reaching eventually not the Pacific Ocean but the Atlantic.

It must be emphasized that our entire stay in Chiapas was well within the dry season. Thus the following characterization of the vegetation applies with certainty only to the aspect of the flora during that season. Indeed a considerable change must be wrought between early May and October, because during those six months almost all of the area's yearly total of thirty inches of rain falls.

In general the Monserrate plateau seemed a dry, semi-desert, though the presence of extensive areas of tall dead grasses indicated that at some season there must be considerable rainfall. The soil was very dry, and so hard on the hill where

we camped that we were unable to drive tent stakes into the ground. Luxuriant vegetation was limited to the margins of the streams. Beyond these stream borders the vegetation abruptly took on a xerophytic aspect. The slopes leading up from the streams, and the adjacent higher fields were covered with dead grasses and scattered mesquite thickets. Cornfields, irrigated patches of sugar cane and small garden plots were tended on the plains near the rivers and on 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 pine (probably Pinus oöcarpa) replaced the mesquite and became denser with increasing elevation. The pine woods were in turn supplanted by oak (Quercus) and other deciduous trees in the mountain ravines, but continued in almost pure stands on the ridges and crests all the way up to the highest mountains that we reached. Cattle ranged over much of the hacienda and the open woods of the mountains to the north, though not in great numbers.

Strong winds from the north and east blew almost continuously during our stay. The clouds of dust which they whipped up were always a problem to us in the preparation of specimens. On April 7, however, the winds subsided, whereupon the heat became oppressive. The weather was warm and sunny throughout the period of our visit, except on March 25 when winds blew a misty rain of short duration down from the mountains. Clouds often hung on the mountain tops a few miles away, and on our single overnight trip into the high country we experienced a light rainfall shortly before dawn on April 6.

We made two collecting trips into the mountains, working in the high country for three days of our two week period in Chiapas. On March 27 we visited an old, neglected coffee plantation northwest of the ranch house. On horseback we rode upward through the pine woods into an oak forest and then on the higher slopes into the thick, damp woods of the coffee plantation, where semi-cloud forest conditions prevailed. This area was known as the cafetal.

We rode into the mountains again on April 5, camping overnight in a pine and deciduous forest near the headwaters of the Río Monserrate several miles west of the cafetal. A sharp, high ridge about a half mile north of our camp separated two stream systems and was for that reason called the división by the hacienda residents. However, the water from both sides of the división eventually drained into the Gulf of Mexico. We collected during the afternoon of April 5 and the morning of April 6 in the mixed woods south of this ridge, and in the forests of sweet gum (Liquidambar styraciflua) with their dense undergrowth, in the ravines on the north side.

Not having sufficient time to plan for more prolonged trips to the nearby mountains we concentrated our attention on the irregular plateau around the hacienda. On several days one of us devoted most of his time to a survey of the fields and ridges between the stream valleys. At such times we worked through occasional dense stands of mesquite, across meadows of two foot tall dry grass, through cultivated and usually irrigated

fields, and along the open pine woods of the small ridges and lower hillsides. Further observations and collections in these types of habitat were made in the course of moving through them enroute to various stream systems and other collecting grounds in the area.

We worked along the rivers of the Monserrate plateau to a distance of five miles south and three miles north of the ranch house. Our main collecting efforts were directed along the three principal streams in this area.

The Río Monserrate was a clear, cold, cascading stream which originated at the división and flowed in a generally southeasterly direction across the plateau, passing within two hundred yards of our camp. In this season it was a mere trickle through a boulder-strewn bed. Its upper reaches flowed through deep canyons, and we saw one waterfall about thirty-five feet high near the división.

A mile south of the ranch house there was a laguna or pond, about one acre in extent, and nearby were several acres of boggy, partially flooded land resulting from the sluggish flow of a small stream through a broad, flat portion of its valley. Huge willows (Salix) dominated the vegetation of this area.

Two miles south of the ranch house a stream, which we called the 'two-mile river', coursed west to east across the narrow dirt road which led from Monserrate to the Pan-American Highway. It had a wide sandy bed, but was a small, shallow stream at the time of our visit.

Still further along, crossing the branch road about five miles south of the ranch house, was the largest river we visited.

Its bed was 100 to 200 feet wide, and in places there was a broad flood plain, but at the ford the water was only a few inches deep and about forty feet wide. The river was known locally as the Río Grande, and evidently carried a great volume of water at some seasons.

During late March and early April there were, in addition to the birds which bred in the vicinity, many species of transients passing through the hacienda. They were not present in especially large numbers, however, indicating that this was probably not the height of the migration. At least one species said to be a winter resident, Muscivora forficata, was present in small groups and seemed to be at the point of leaving for the north. Of particular interest is the fact that even in this extreme southern portion of Mexico we found the nests of only six species of birds, although we were in the field for several hours daily. Buteogallus anthracinus, Myiozetetes similis, Pitangus sulphuratus, Corvus corax, Calocitta formosa and Thryothorus pleurostictus were constructing nests or incubating. Several other species were in breeding condition, but as a whole there were few birds singing consistently. Many species which we expected to find nesting were still moving about in flocks. Many specimens which we collected were in the pre-nuptial molt.

The birds which we encountered in the plateau region of the hacienda included many species generally considered to be characteristic of the Arid Tropical Zone. The forms represented reflect the intermediate position of the avifauna of the southeastern portion of the Isthmus of Tehuantepec, when compared

with the West Mexican and the Central American divisions of the Arid Tropical Fauna.

Indication of a close affinity with the West Mexican Arid Tropical Fauna was the presence of Ortalis vetula poliocephala, Trogon citreolus, and Momotus mexicanus and Cassiculus melanicterus. (cf. Griscom, 1934:370).

On the other hand, Passerina leclancherii, which we had noted singing commonly near Juchitán, Oaxaca, was absent or escaped our notice at Monserrate; while Burhinus bistriatus, a bird of Central America and southern Mexico rather than the western Mexican lowlands, was to be heard calling almost every night. Similarly, Piaya cayana was represented by its Central American and eastern Mexican form, thermophila, rather than Mexicanus of western Mexico; and Calocitta formosa by impudens of the interior of southern Mexico and Central America rather than the nominate race of the west coast of Mexico.

Our specimen of Aimophila ruficauda proves to be of an intermediate race, lawrencii; while a hummingbird that we obtained, Heliomaster constantii leocadiae, is a form well established in both western Mexico and interior Guatemala.

Only a few miles away from the ranch house in certain portions of the mountains to the north and northwest, radically different conditions prevailed. There we found many species characteristic of the Humid Upper Tropical Zone (Subtropical Zone of Griscom, 1932 and 1934) well established in the dense, moist forest. We did not penetrate far into this type of habitat which we encountered both at the cafetal and at the división, but near

the edges at least we found that it was deeply indented by dry pine-covered ridges. Forest fires, which were burning through the mountains during our stay, consumed the brush, grass and some of the pine trees on the tops and sides of these ridges but were abruptly halted by the moist vegetation of the ravines. Species which we encountered only in the damp deciduous forests near the división and the cañetal included the following:

<u>Odontophorus guttatus</u>	<u>Sittasomus griseicapillus</u>
<u>Trogon collaris</u>	<u>Rhynchocyclus brevirostris</u>
<u>Aulacorhynchus prasinus</u>	<u>Catharus mexicanus</u>
<u>Xenicoptes montanus</u>	<u>Myioborus miniatus</u>
<u>Xiphorhynchus flavigaster</u>	<u>Chlorospingus ophthalmicus</u>
<u>Xiphorhynchus triangularis</u>	

In addition to the rather well marked, clearly separated Arid Tropical and Humid Upper Tropical faunas, there were indications of another, loosely characteristic of the Temperate Zone in Mexico (cf. Blake and Hanson, 1942). Although the species making up the Temperate Zone fauna were most commonly to be found in the upland fields and the dry, open hillside woods, their ranges were much less clearly circumscribed than those of the Arid Tropical and Humid Upper Tropical faunas, and some representative species could be found in each type of habitat that we visited. We encountered Balanosphyra formicivora from the edge of the stream vegetation near the ranch house all the way up through the pine woods to the high ridge of the división. Lea took a specimen of Hylocharis leucotis leucotis from a group of almost two dozen at the división, the only place that we

noted the species. We saw Sturnella magna occasionally in the cultivated fields near the ranch house, and took a female of the race alticola.

In every type of habitat in the vicinity we consistently encountered North American transients, although they were noticeably less common in the damp deciduous forests of the división and the cafetal than elsewhere. Commonest of all were the wood warblers, which were particularly numerous around the lowland streams and in the pine woods on the hillsides. Several species of fringillids moved about in the mesquite and larger trees near the streams, flocks of Passerina cyanea, Guiraca caerulea and Chondestes grammacus being especially conspicuous. Flycatchers were the most widely distributed of the transients; we encountered individuals of the genus Empidonax in approximately equal numbers from the stream bottoms up to the división.

Because of the short duration of our stay in this area, our collection is incomplete and our records of approximately forty species are not supported by specimens. Therefore these species are not included in the annotated list, but for the sake of completeness are listed below with brief discussions of some more important ones in the succeeding paragraphs.

Podilymbus podiceps

Casmerodius albus

Heterocnus mexicanus

Cairina moschata

Anas discors

Sarcoramphus papa

Coragyps atratus

Cathartes aura

Buteo jamaicensis

Circus cyaneus

Polyborus cheriway

Falco sparverius

Penelope purpurascens

Actitis macularia

Burhinus bistriatus

Columba flavirostris

Zenaidura macroura

Zenaida asiatica

Columbigallina passerina

Aratinga astec

Caprimulgus vociferus

Chaetura sp.

Piculus sp.

Dendrocopos scalaris

Sphyrapicus varius

Tyrannus vociferans

Stelgidopteryx ruficollis

Hirundo rustica

Corvus corax

Thryothorus maculipectus

Mimus sp.

Bombycilla cedrorum

Tangavius aeneus

Tanagra sp.

Piranga ludoviciana

Guiraca caerulea

Spinus psaltria

Chondestes grammacus

Of the large carrion feeders we noted Cathartes aura in somewhat greater numbers than Coragyps atratus, though we seldom saw more than a half-dozen of the former species daily. We saw Polyborus cheriway regularly, but rarely more than one each day. On April 2 Edwards watched a King Vulture (Sarcoramphus papa) for fifteen or twenty minutes, as it soared in from the high ridge to the north, gradually drifted toward the rugged

hills to the southwest and eventually disappeared in that direction. During this time it remained 1000 feet or more above the ground and never flapped its wings.

We heard Burhinus bistriatus often at night in the pastures and cultivated fields, and along the irrigation ditches on the Monserrate plateau, but never saw them between dawn and dusk, when they apparently retreated to the protection of the undergrowth. They commenced calling, a loud crane-like "barking", in the twilight after sundown, and continued to call intermittently throughout the night, their activity increasing with the waxing moon.

They spent most of their time on the ground, where they could run very fast. When pursued, they took wing and zoomed around low over the ground with a darting flight, never rising more than a few feet, as though trying to keep in the shadows of the scrub growth in the pastureland. This type of flight was very effective in making the birds difficult to see. While flying they uttered a low, guttural, rolling, tremulous call of variable quality in one pitch.

Only once did either of us see the bird clearly. On April 3 Lea spotted the bird with a flashlight and chased it through a pasture. It screamed loudly as it ran along an erratic course, sometimes taking wing for a low flight over the mesquite, and frequently running up and over the bushes, as though ascending a flight of stairs three steps at a time.

The Thick-knees were secretive. We heard no more than three calling from any one area. When disturbed they ranged a half mile or more in any direction and thus were difficult to contact. The Mexicans, however, were well acquainted with these large nocturnal visitors to their corrals and pastures, and applied to them the name Alcaraván.

Doves and pigeons were prominent in the avifauna of Monserrate. Along or near the rivers of the plateau country we daily encountered small flocks of Columba flavirostris, while Zenaidura macroura was somewhat less common and only to be found in the open fields and pasturelands. Zenaida asiatica was second in abundance among the doves to Scardafella inca, and ranged more widely than the others. Flocks fed daily around the ranch buildings, in the pastures, and in the laguna area. Columbigallina passerina rarely ventured into the corral but occurred in small numbers along the road and streams of the Monserrate plateau.

Corvus corax was present in small numbers, and a pair was apparently nesting in a pine tree on the plateau. Edwards observed a large nest of sticks about thirty feet high in a medium sized pine tree, to the obvious distress of two Ravens that remained close to the tree and continued to call excitedly as long as he was in the vicinity.

Annotated List of Species

Buteo albicaudatus hypospodius Gurney - Sennett's White-tailed Hawk ("Gavilán blanco"). We observed two pairs occasionally March 26 to April 3. One pair frequented the laguna area. Lea saw the other pair flying about the fields west of the hacienda. From perches in the tops of scattered pine trees these birds called back and forth to each other in a high-pitched whistle. Our male specimen had small testes.

Buteo nitidus micrus (Miller and Griscom) - Southern Gray Hawk. We noted the species fairly frequently along the Río Monserrate and the Río Grande, and in the pine woods west of the hacienda. Edwards saw a pair copulating March 30, and on the same day observed an adult bird soaring overhead with one in sub-adult plumage. Our male specimen with somewhat enlarged testes was collected as it exchanged calls with its apparent mate. According to our observations this was the most common Buteo in the area.

We examined fourteen specimens of B. n. micrus at the U.M.M.Z., nine from Chiapas and five from Yucatan. The tail measurements given below are in agreement with those of Dickey and van Rossem (1938), who pointed out the considerable error in the original description of Miller and Griscom (1921). Our specimen is a long-tailed male which measures, wing 250mm, tail 161.5.

Tail measurements of fourteen adult B. n. micrus examined at the U.M.M.Z.:

Chiapas : 5 males 150, 155.5, 145, 146.5, 153 (Av. 150.0)
4 females 162, 167, 161, 166 (164)

Yucatan : 3 males 157, 188, 155 (156.7)
2 females 167, 161.5 (164.25).

These Chiapas and Yucatan birds represent a considerable northern extension of the range of B. n. micrus given by Peters (1931).

Buteogallus anthracinus anthracinus (Lichtenstein) -

Mexican Black Hawk. We encountered this hawk almost daily a short distance northwest of the ranch house in woods along the Río Monserrate. Here Edwards found an occupied nest on March 26. The simple structure was composed of sticks placed on a horizontal crotch of a limb about forty feet above the ground in a tree near the river bank. The adult birds showed considerable distress on the occasion of the discovery by flying about in the vicinity and screaming loudly. On subsequent visits to the nest our presence failed to cause them great concern, the bird in attendance remaining quietly on the nest or, as on April 2, both adults soaring calmly at a considerable distance overhead. We did not determine the contents of the nest. Little activity was noted there except what appeared to be incubation.

Our female specimen collected from this nest April 4 had an enlarged ovary. It measures wing 387mm, tail 221, tarsus 93, middle toe without claw 40. The gizzard contained a crayfish and the remains of a small mammal.

Ortalis vetula poliocephala (Wagler) - Gray-headed Chachalaca. Fairly common. We saw or heard the birds almost every day that we were in the plateau country. We encountered them both in the trees and on the ground in groups of as many as five

along the watercourses. Our specimen, a female with slightly enlarged ovary, was giving the "break-it-up, break-what-up" call with its mate in a tree above the river.

Compared with the type specimen of O. v. vallicola Brodkorb in the U.M.M.Z., our bird is distinctly larger (wing 243mm, tail 282) and clearly paler (more white) on the belly, and more buffy on the crissum and tail. The tips of the rectrices are considerably more buffy and this tipping is far more extensive (about 50mm) than the 15 to 20mm of buffy tip on the rectrices of O. v. vallicola.

Colinus virginianus (Linnaeus) - Bob-white. We saw coveys of four to six birds almost daily from March 26 to April 1 in the grasslands on the Monserrate plateau. The males had red-brown, unspotted breasts and bellies. We obtained a single specimen, a female with slightly enlarged ovary. This bird does not agree very well with females of the various races known from the region.

At the U.M.M.Z. we compared our bird with a series consisting of four C. v. insignis, four C. v. coyolcos, and two C. v. nelsoni. Our specimen has more of a buffy wash to the underparts and less sharply contrasted ventral markings than any bird in this series. The rufous shaft stripes of the interscapulars are wider than in any C. v. coyolcos, and in this respect it most closely resembles C. v. nelsoni. The back of our specimen is definitely browner than that of any C. v. insignis at hand. The back is browner and less grayish than C. v. coyolcos and is closer to C. v. nelsoni than to any other birds in the series. No comparisons were made with C. v. thayeri, but according to

Friedmann (1946) the females of thayeri and coyolcos are practically indistinguishable.

After further comparisons at the Chicago Museum of Natural History with Mr. Conover's generous assistance, we were still unable to satisfactorily place our specimen subspecifically.

Odontophorus guttatus (Gould) - Spotted Wood Quail.

Edwards surprised a loose group of several birds in the undergrowth on the north side of the division on April 5. They ran rapidly, holding their crests erect and calling excitedly, and flew only when hard pressed. He collected one of them, a female with slightly enlarged ova. It is an average erythristic phase with narrow white shaft streaks on the feathers of the throat, which differs from the type of O. g. matudae Brodkorb in having no orange-buff medial shaft streaks on any of the feathers of the crest and rounded rather than tear-shaped markings on the breast, sides and abdomen.

Examination of the material in Ann Arbor and Chicago led us to follow Friedmann's (1946) concept of a dichromatic species with considerable individual variation. If further material proves the distinctness of matudae, our bird will probably be a representative of the nominate race.

Tringa solitaria cinnamomea (Brewster) - Western Solitary Sandpiper. We saw two birds at the 'two-mile river' on March 28 and 30, and one at the Río Grande on March 31. Our specimen, a large male in non-breeding condition, measures: wing 137mm, tail 59, culmen 32.5. A restricted area at the base of the inner web of the outer primaries is marbled with whitish, a character pointed out by Taverner and Sutton (1934).

Scardafella inca (Lesson) - Inca Dove ("Palomita"). The most abundant dove at Monserrate. We saw it every day feeding in small flocks in the barnyards and around dwellings, or flying about the fields and pastures. We obtained a female specimen on March 31. The ovary was small.

Leptotila verreauxi angelica Bangs and Penard - White-fronted Dove. We saw these terrestrial doves infrequently around the hacienda and along the rivers of the plateau. Our specimen from the laguna area was a female with much enlarged ovary.

Leptotila verreauxi bangsi Dickey and van Rossem - Bang's White-fronted Dove. Noted frequently in the higher country at the división and the cafetal, where it was the most common dove next to Columba flavirostris. Our female specimen from the división (ovary much enlarged) compares favorably with a series of twelve L. v. bangsi from Chiapas in the U.M.M.Z. collection.

Aratinga holochlora holochlora (Sclater) - Green Parakeet ("Perico"). We saw screeching flocks daily along the rivers of the plateau, where they fed in the flowering trees, apparently eating the developing seeds of mimosa-like blossoms. We saw a few of these parakeets at the división but none at the cafetal. We noted a definite influx of this species, the flocks becoming larger and more noisy toward the end of our stay. Our two specimens had only slightly enlarged gonads, and both were small, measuring: wing 161, 157; tail 130, 123; culmen 26.5, 25.

Amazona autumnalis autumnalis (Linnaeus) - Yellow-cheeked Parrot. We noted this species almost daily in flocks numbering

up to six birds along the rivers and at the división. Occasionally we saw a single bird flying over the pine woods at a considerable distance from the rivers. Our female specimen had a somewhat enlarged ovary. It differs from typical A. a. autumnalis in small size (wing 197mm, tail 101), and in having a narrow suborbital band of yellow. It is thus a possible intergrade with A. a. salvini (Salvadori).

Playa cayana thermophila (Sclater) - Central American Squirrel Cuckoo ("Pájaro Bobo"). We saw this species infrequently along the rivers and once at the división. A breeding female, which Lea took on March 28 at the 'two-mile river'; measures: wing 156.5mm, tail 267, tarsus 42.5.

Geococcyx velox melanchima Moore - Pale Roadrunner ("Botapie"). We saw the species only three times. On March 26 we saw one bird near our camp on a dry hillside behind the ranch house, and on the following day we encountered one in the grassy pine woods in a dry arroyo about two miles north of the ranch house. Lea saw a pair in a dry field above the laguna on April 2 and collected the female, which had a very large ovary. The measurements of this specimen and those of a series of G. velox given by Moore (1934) are listed below.

Following Moore's analysis of the species we believe that our bird is an intergrade between G. v. affinis and G. v. melanchima, which we place with the latter race on the basis of the length of the black subterminal bar on the lateral rectrices and the absence of gray on the second from the outer rectrices. Some measurements such as the wing and length of the tip of the lateral rectrices are closer to affinis. Others (tail,

length of gray on lateral rectrices) are intermediate between the two races. The length of the black bar on the lateral rectrices, lack of gray on the second from the lateral rectrices, exposed culmen and length of the outer, anterior toe minus claw are closer to melanchima.

Measurements of our specimen compared with a series of Geococcyx velox from Moore (1934):¹

	Wing	Tail	Exp. Cul.	Out. ant. toe minus claw	Tar.
Our specimen	145	267	38	30	56
Moore's specimens					
<u>melanchima</u> (13 ad. ♀)	134.6	260.8	36.3	29.2 ⁽⁵⁾	47.7 ⁽⁷⁾
<u>affinis</u> (8 ♀/Guatemala)	145.1	273.2	34.9	28.6	

Measurements of tail characters:

	Length Tip Lat. Rect.	Length Black bar Lat. Rect.	Length Gray Lat. Rect.	Length Tip 2nd Rect. from outside	Length Gray 2nd Rect.	Length Tip 3rd Rect.
Our specimen	38.5	26.	112	33	0.0	18.5
Moore's specimens						
6 <u>melanchima</u>	33.6	18.6	110.9 ⁽²⁾	28.2	0.0 ⁽²⁾	15.2
15 <u>affinis</u>	35.1	11.7	115.4 ⁽¹²⁾	31.8	46.3 ⁽¹³⁾	18.0 ⁽¹³⁾
3 <u>longisignum</u>	37.4	4.9	122.3 ⁽¹⁾	31.6	37.1 ⁽¹⁾	17.2

These measurements show that our specimen is an intergrade between the race from the Arid Tropical Zone of northwestern Mexico (melanchima) and the race from the arid regions of the Subtropical Zone of Guatemala and Salvador (affinis).

1. Parentheses indicate number of specimens measured when less than total number listed were used.

Crotophaga sulcirostris sulcirostris Swainson - Groove-billed Ani ("Pijui"). We saw Anis commonly in the dry thickets along the rivers of the Monserrate plateau. We did not find them in the mountains at the división or the cafetal. Lea took a female specimen with somewhat enlarged ovary on April 1 along the Río Monserrate.

Glaucidium brasilianum ridgwayi Sharpe - Northern Ferruginous Pygmy Owl ("Tecolote"). The species was fairly common. We heard it calling in the early morning, at night and occasionally in the daytime. Lea saw three of them together near the Río Grande March 30. One of them was feeding on a small mammal. When it flew, it carried the food in its talons.

Our specimen, a male with small testes taken along the 'two-mile river' on March 30, was compared with a series of G. b. saturatum and the type thereof from Chiapas at the U.M.M.Z. It proves to be a grayish-brown phase ridgwayi with brown and rufous tail bands, which approaches saturatum in size, wing 99mm, tail 62.

Nyctidromus albicollis yucatanensis Nelson - Pauraque ("Tapacamino" or "Tandallo"). Calling and night activity of this species increased with the waxing moon. During the bright moonlight nights of April 1 to 5, P^uraques were calling everywhere about the Monserrate plateau. They could be easily approached as they crouched on the dusty roads.

A female (wing 164mm, tail 145) collected on March 29 had an enlarged ovary. Its gizzard was stuffed with carabid and scarabeid beetles. We place it with N. a. yucatanensis, though it is slightly grayer than average yucatanensis in the large

U.M.M.Z. series from Yucatan. A singing male (wing 155mm, tail 149.5) with very large testes, taken April 3, is closest to H. a. albicollis (Gmelin) in size, but is distinctly paler below, and in this respect compares favorably with H. a. nelsoni Ridgway and H. a. yucatanensis. Since we have only two specimens of nelsoni at hand, we place this bird as a small specimen of yucatanensis.

Amazilia violiceps violiceps (Gould) - Violet-crowned Hummingbird. Along the rivers and at the laguna we occasionally saw these birds in groups of two or three feeding with Amazilia cyanocephala. We did not see the species in the mountains. One of our two male specimens had a much enlarged testis. These two birds are dusky-crowned "guerrerenensis stages" as characterized by Griscom (1934).

Amazilia cyanocephala cyanocephala (Lesson) - Red-billed Azure-crown. This species was fairly common. We observed groups of three or four feeding in the flowering trees along the rivers and at the laguna. Our two male specimens were not in breeding condition. The female taken at the división on April 6 had a somewhat enlarged ovary. The tail of this specimen was a deeper green and somewhat more bronzy than any of the cyanocephala specimens available at the U.M.M.Z., but it does not have the rich metallic color of typical guatemalensis.

Hylocharis leucotis leucotis (Vieillot) - White-eared Hummingbird. At the división on April 5, Lea watched a group of about twenty feeding noisily in a flowering tree. They gave

chipping callnotes. Our specimen is a male with small testes, and measures, wing 54.5mm, culmen 16.5.

Heliomaster constantii leocadiae (Bourcier and Mulsant) - Pine Star-throat ("Chupaflor"). We saw this species on April 2 when Lea collected two from a group of seven that were feeding in a tree near the laguna, and Edwards took one in the pine woods west of the ranch house. All three specimens were males. In only one of these were the testes at all enlarged.

Archilochus colubris (Linnaeus) - Ruby-throated Hummingbird. Edwards took a poorly plumaged, molting female, with small ovary, near the laguna, March 29.

Trogon collaris puella Gould - Jalapa Trogon. Common in the high country. We saw it April 5 and 6 in the sweet gum forest at the división. Most of the birds which we encountered appeared to be paired. Our female specimen had a somewhat enlarged ovary.

Trogon citreolus sumichrasti Brodkorb - Sumichrast's Citreoline Trogon. We saw one or two birds infrequently along the rivers, and sometimes heard them calling in the heavy riverside growth. We collected the male of a pair and found that it was not in breeding condition. Compared with the type and a series of sumichrasti from Chiapas in the U.M.M.Z., our specimen is in fresher plumage and has much brighter yellow on the abdomen. It measures, wing 142mm, culmen 22. It is almost a topotype, though it was collected at much greater altitude than the type specimen.

Chloroceryle americana vanrossemei Brodkorb - van Rossem's Green Kingfisher ("Pescador"). We saw one or two individuals of

this species almost daily along the streams we visited. Our male specimen with enlarged testes is a large, especially long-tailed bird, measuring, wing 85mm, tail 62, culmen 48.5. Five males listed in the original description of the race measure, wing 81 - 83.5mm, tail 55 - 57.5, culmen 45.5 - 47.5.

Compared with the type and a good series of vanrossemi in the U.M.M.Z., our specimen is very similar in having the green spots on the posterior underparts much reduced and confined to the flanks and with the green sub-malar streak much reduced. The race seems perfectly valid to us, though we only examined the Michigan series of eleven males and four females.

Momotus momota lessonii Lesson - Lesson's Motmot.

Edwards saw a single bird along the trail in the deciduous forest just south of the división on April 5 and 6. The specimen taken had a much enlarged ovary with conspicuous ova. The central rectrices of this specimen were only about $2\frac{1}{2}$ inches long and had only recently broken out of their sheaths. They were still completely invested with barbs.

Momotus mexicanus saturatus Nelson - Mexican Motmot

("Guanda-barranca"). We saw one or two birds almost daily along the rivers. Edwards saw and heard one in a barranca in some very open pine-oak woods about $2\frac{1}{2}$ miles north of the ranch house. Lea saw one bird in the sweet gum forest at the división, apparently rather far from its usual habitat. We seldom heard them call. Our male specimen (wing 127mm, tail 199, culmen 43) was not in breeding condition.

Aulacorhynchus prasinus prasinus (Gould) - Emerald

Toucanet. At the división on April 6 Edwards saw a group of two

and a group of three. They were sitting quietly in thickly-leaved trees and called frequently with loud, vigorous "wacks" repeated over and over. When approached they stopped calling but did not fly off immediately.

Compared with the type and a large series of chiapensis we found our bird smaller winged and lacking the golden olive tinge on the hindneck, pileum and upper back. It has no chestnut tip on the inner rectrices and is very close to stenorhabdus except that the tomial stripe has a maximum width of four millimeters. Our specimen had unenlarged testes.

Centurus aurifrons polygrammus Cabanis - Oaxaca Woodpecker ("Carpintero"). We saw this species frequently along the rivers and around the ranch buildings in all types of environment. We watched them investigating nesting holes in the palm trees around the ranch house and in the large trees at the laguna. We saw them most frequently in pairs, and occasionally observed them engaging in odd feeding antics, hanging from small branches to pluck ripe fruit.

Following the analysis of this species by Griscom (1932) and Wetmore (1943), we find that our two male specimens compare favorably with a series of polygrammus in having very narrow black and white dorsal bars, orange-red areas of crown and nape nearly confluent and heavy white markings on the central rectrices. Measuring, wing 133mm, tail 75.5, culmen 31, the smaller specimen tends toward frontalis in size. Both specimens had enlarged testes.

Balanosphyra formicivora lineata Dickey and van Rossem - Acorn-storing Woodpecker. We noted them occasionally in the

pine woods west of the Río Monserrate and along the dry ridges at the división and near the cafetal. We saw them most frequently on fairly open hillsides, which were forested with scattered pine and a few oaks. Edwards saw three of them together in the palm trees at the ranch house on March 29. They called frequently but no nesting activity was noted in this species, though our male specimen had much enlarged testes. It differs slightly from a series of twenty-five lineata from Chiapas in having lightly streaked underparts and a very light yellow throat.

Hylatomus lineatus similis (Lesson) - White-billed Pileated Woodpecker ("Guachacón"). We found this species infrequently in the pine woods north of the ranch house, at the Río Grande and near the laguna. Edwards collected a male with slightly enlarged testes which measured, wing 173.5mm, tail 106, culmen 36.

Xiphorhynchus flavigaster (Swainson) - Swainson's Woodhewer. We noted the species only in the sweet gum forests at the división, where Lea collected a male with much enlarged testes on April 5 and Edwards saw two on April 6.

Our specimen cannot be satisfactorily placed with any of the known subspecies and may represent an undescribed race. It is closest to eburneirostris but differs in being much darker and grayer, less buffy. The ventral and dorsal spots and the throat lack the strong buffy tinge of eburneirostris, while the dark borders of the spots are much blacker than in that race. Thus, in coloration it is not intermediate between any two races but blacker than any of them. In large bill size (exposed culmen 43mm), however, it approaches flavigaster. A male from

Prúsia, Chiapas, is close to ours but is slightly buffier and considerably smaller-billed. A female from Prúsia appears to be good eburneirostris.

Xiphorhynchus triangularis erythropygus (Sclater) - Spotted Woodhewer. In the sweet gum forest on April 6 Edwards secured a breeding male as it flew swiftly to the base of a large sweet gum tree and began moving up. Its call was a drawn out, piercing whistle, sliding down about two tones in pitch.

Sittasomus griseicapillus sylvioides Lafresnaye - Mexican Sittasomus. We saw these small woodhewers occasionally at the cafetal and in the humid forest at the división. Our specimen is a breeding male from the cafetal.

Xenicopsoides montanus variegaticeps (Sclater) - Scaly-throated Xenicopsoides. Edwards first saw this bird on April 5 in the humid sweet gum forest, moving about among the small branches about thirty feet from the ground. On the following day he watched two others which fed in much the same manner. They stayed out near the ends of small branches most of the time, occasionally even hanging upside down. The call was similar to that of a downy woodpecker, though more rolling. Our specimen is a male which had enlarged testes.

Thamnophilus doliatus intermedius Ridgway - Mexican Ant-shrike. Edwards collected a male in a fire-dried patch of weeds near a small stream in the mountains. The testes were quite small. After examination of all the material in the U.M. M.Z. and the Chicago Museum of Natural History, we agree with Griscom (1932) that intermedius is a variable bird. Our specimen is pale below and has very wide dorsal white stripes, sugg-

esting the possibility of intergradation with pacificus.

Tityra semifasciata personata (Jardine and Selby) - Mexican Tityra. This bird was not restricted to any one type of habitat, though we did not see it in large numbers in any area. Three times we saw it in the immediate vicinity of the ranch house and corrals, once a group of four flying over. In the very dry woods near the Río Grande Edwards saw another group of four birds. Lea saw the species at the división. Our specimen, a male with somewhat enlarged testes, measures, wing 133mm, tail 78.5, culmen 27. Although we had no griseiceps material available, our bird compared favorably with eight specimens of personata from Chiapas.

Pyrocephalus rubinus flammeus van Rossem - Vermilion Flycatcher. We saw this species only three times during our two weeks stay in Chiapas. Our specimen is a male with somewhat enlarged testes. In the definite orange tinge to the crown and underparts and in the small measurements (wing 77mm, tail 57.5, culmen 13) it clearly represents the western race.

Muscivora forficata (Gmelin) - Scissor-tailed Flycatcher. We encountered these birds almost every time we went into the dry, open country of the hacienda. They often congregated in loose groups of a dozen or more individuals, perching near the tops of the scattered mesquite trees, and occasionally flying out for insects or bickering with the kingbirds (Tyrannus melancholicus). The manager of the hacienda said that this species was seen throughout the winter, but not at all during the summer. Our specimen is a non-breeding male.

Tyrannus melancholicus chloronotus Berlepsch - Berlepsch's Olive-backed Kingbird. This was the most noticeable and probably the most abundant flycatcher of the dry fields, frequenting the scattered mesquite growth around the hacienda.

A male taken on March 31 was not in breeding condition. It compares favorably 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, though the throat is as white as any of the specimens of the western race at hand.

Megarynchus pitangua mexicanus (Lafresnaye) - Boat-billed Flycatcher. Lea identified the species with certainty at the 'two-mile river' and collected there a female with considerably enlarged ovary. No caniceps are available for comparative purposes, but our specimen has definitely sooty-black pileum and greenish-olive back. It agrees nicely with a large series of mexicanus from Chiapas and Yucatan.

Myiozetetes similis texensis (Giraud) - Giraud's Flycatcher. Whenever we approached the rivers and streams around the hacienda we encountered this querulous, nervous flycatcher. Occasionally it ventured up to our camp about a hundred yards from the Río Monserrate, but we seldom saw it that far from water. On April 2 Lea saw one carrying nesting material to a nearly completed nest on a branch about fifteen feet above the river. A female taken at the laguna had an unenlarged ovary. Measuring, wing 96.5mm, tail 79, culmen 16, it is larger than any of the ten female specimens from Chiapas in the U.M.H.Z.

Pitangus sulphuratus derbiamus (Kaup) - Derby Flycatcher.

Along the rivers and large streams this was the most conspicuous bird. It outnumbered the Giraud's Flycatchers with which it was closely associated, and was more noticeable because of its larger size and louder calls. At the laguna Edwards observed one carrying nesting material to a partially completed nest.

Our female specimen had a somewhat enlarged ovary. In back coloration it is typically derbiamus, showing no departure toward the darker and more olivaceous coloration of guatemalensis. It is a large (wing 118mm, tail 89.5), bright-bellied bird.

Myiarchus cinerascens mexicanus (Kaup) - Kaup Flycatcher.

We saw the species with increasing frequency toward the end of the first week in April, although we never found it common. Generally we observed it in the sparse mesquite growth near the streams.

Our adult female specimen proved, upon comparison, to be identical with typical cinerascens except that the tenth (outermost) primary was considerably shorter than the fourth, about equal to the third. In accord with the analysis by Griscom (1934) of this confusing group of flycatchers, such a combination of characters places our bird in his Group 3, which was later included under mexicanus by van Rossem (1945) when he revived Kaup's name.

Myiarchus cinerascens inquietus Salvin and Godman -

Guerrero Flycatcher. Our male specimen differs from typical examples of inquietus only in having the dusky bar along the shaft of the outer rectrix restricted to the terminal third of the feather. It thus falls into Group 5 of Griscom (1934),

which is not designated by name but is closest to inquietus. Our specimen shows the deeper yellow underparts, the more rufescent upper tail coverts, the more olive brown back and the smaller size of that race. The tenth primary is much shorter than the fourth.

Myiarchus tuberculifer lawrencei (Giraud) - Lawrence's Flycatcher. Lea secured a female near the division on April 5. Edwards watched an individual of this species as it called a mournful "whee-ee-oo-oo," and later heard several others. Apparently a small wave of these flycatchers was passing through. They seemed to prefer the open pine woods along the sides of the ridges. Our specimen with small ovary had a wing measurement of 83.5mm.

Empidonax minimus (Baird) - Least Flycatcher. Over the whole area that we covered, Empidonaces were common. We encountered them daily in all sorts of habitats around the hacienda, and all the way up to the division. They frequently uttered a single note, a sort of musical "pit," but otherwise were silent. On March 25 and March 31 in the dry plateau country we secured two females with small ovaries and found them to be E. minimus.

Rhynchocyclus brevirostris brevirostris (Cabanis) - Short-billed Flat-bill. In the sweet gum forests Edwards collected a female of this species. The following morning he saw three other individuals. Apparently breeding activity had not commenced, our specimen having an unenlarged ovary. These birds were very quiet, moving about very little and not calling.

Calocitta formosa impudens van Rossem - Magpie-jay

("Chaque"). This long-tailed jay was common along the small rivers and adjacent dry slopes of the hacienda. Its loud calls and striking appearance made it rather conspicuous, although it often concealed itself effectively by remaining quietly in the upper branches of heavily leafed trees. We did not see it near the división, though we did see the Green Jay (Xanthoura yncas) there. The Magpie-jay often ranged through the scattered mesquite thickets and open pine woods at considerable distance from the river. On March 26 Lea found a nest probably of this species on a tree branch overhanging the river. It was on a horizontal fork about twenty feet up and was constructed of sticks. Two Magpie-jays were in the nest-tree close to the nest, scolding loudly as long as Lea remained near the tree. Returning later in the morning, he saw a pair at the same place.

Our adult male specimen taken April 1 had enlarged testes. It is much too pale and grayish to be placed with azurea and lacks the black malar patch and black pileum of typical formosa. We have no pompata at hand for comparison, but our specimen agrees closely with a specimen of impudens from Zacapa, Guatemala.

Xanthoura yncas vivida Ridgway - Tehuantepec Green Jay.

We saw several Green Jays at the cafetal and in the more humid woods along the stream up near the división. However, it was rare around the hacienda, being seen only once in the plateau region, by Edwards. At this time on March 30 he collected one of two that were scolding in some dry open woods near a small river five miles south of the hacienda house. It was a male

in breeding condition. The eyes were bright yellow and the mouth lining was black.

Thryothorus pleurostictus oblitus (van Rossem) - Banded Wren. This species was common in all parts of the hacienda except the upland fields and open pine woods. We found Banded Wrens all the way up the Río Monserrate to its source in the high humid mountain ridges, as well as in the very dry mesquite covered slopes near the river.

We frequently saw well constructed retort-shaped nests made of what appeared to be the seed stalks of small grasses, placed from four to six feet above the ground in mesquite or Acacia. One day 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 unconcealed about twenty feet away. None of the nests contained eggs, but all appeared to be new nests.

We heard birds singing daily. It was a varied song reminiscent of the pattern and rhythm of many of the phrases of a canary. It was considerably lower in pitch than the canary's song, however, and much louder.

One of our specimens is a male which, surprisingly, had very small testes. The other is probably a male also but was too badly shot to be sexed with certainty. We have followed the revision of the species by Brodkorb (1942) in placing our specimens in the race oblitus. Comparison with the types of Brodkorb's two new races shows ours to be too dark and brownish-backed for acaciarum and to lack the rufous tinge of the back of oaxacae.

Turdus grayi tamaulipensis (Nelson) - Gray's Robin.

We usually found these birds in small, loose flocks along the rivers and at the laguna. They were almost entirely confined to the heavy tree growth in these areas. They were shy and quite inconspicuous in voice and action as well as in color. The only sounds we heard them make were single "clucks" or a rapid series of "clucks" which seemed to be scold notes.

Our specimen, a female with small ovary taken March 30, is somewhat darker than toponotypical tamaulipensis but well within the range of color variation of a series from Tamaulipas.

Myadestes obscurus oberholseri Dickey and van Rossem - Brown-backed Solitaire. In the oak woods of a high mountain valley and at the cafetal we heard the song of this species. We heard and saw several of them in the moist ravines and slopes near the división. From a group of three or four Edwards collected a female with unenlarged ovary.

Catharus mexicanus cantator Griscom - Guatemalan Black-headed Nightingale Thrush. Edwards collected a male with enlarged testes on April 5 in the high sweet gum forest as it came to perch momentarily on a low vine. It uttered a low "chuck" call note very much like that of Hylocichla guttata. Later Edwards saw several others of this species in the same moist ravine. They were shy and he saw none singing.

The bill and fleshy eye-ring of the fresh specimen were bright orange, the maxilla being tinged with dusky along the culmen, and the legs were dull orange. It helps to fill a considerable gap in the published range of the species, since it has not heretofore been recorded between Veracruz and Guatemala.

In view of the size of the testes, it is probable that the bird breeds in these sweet gum forests.

Polioptila caerulea deppei van Rossem - Mexican Gnatcatcher. Edwards saw this species twice during our stay in Chiapas, on April 1 and 2. Both times the bird was moving about alone in mesquite. The second one, when collected, proved to be a female with unenlarged ovary. It was quite a small bird (wing 45.5mm, tail 42).

Polioptila plumbea albiloris Sclater and Salvin - White-colored Gnatcatcher ("Chinita"). Almost daily we saw several of these birds flitting about in the mesquite of the dry fields or in the less dense riverside cover. They seemed always to travel in pairs.

Because of our limited field experience with this group, we merely follow Hellmayr (1934) in using the specific name plumbea. Our specimens, one male and three females, then fall readily into the race albiloris as applied by him. They belong to the group which van Rossem (1931, Auk, 48:33-39) calls Polioptila bilineata albiloris, and to the group which Brodkorb (1944, Journ. Wash. Acad. Sciences, 34:311-316) has referred to Polioptila albiloris vanrossemi.

The male has a few white feathers in the lores of the right side but no trace of white superciliary. Several males observed in the field all lacked white superciliary stripes. In contrast, all females which could be scrutinized carefully had at least partial white superciliary lines and some white above and behind the posterior angle of the eye. Our female specimens showed variations from white to grayish lores, the

color not being the same on both sides of one individual.

Cyclaris^h gujanensis flaviventris Lafresnaye - Mexican Pepper Shrike. This species was not common but we had opportunity to observe several individuals during our stay in Chiapas. Three or four times we heard them singing, and at such times they were perched in the upper branches of trees thirty to sixty feet high. When they were not singing we found them moving about in low thick shrubbery. 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 with which we are familiar in the eastern United States.

Neither of our specimens taken March 29 and 30 was in breeding condition.

Vireo solitarius solitarius (Wilson) - Blue-headed Vireo. We saw this species several times in the trees along the rivers and at the laguna. A female (ovary very small) taken March 26 by Edwards belongs to the race solitarius.

Vireo gilvus gilvus (Vieillot) - Eastern Warbling Vireo. We saw approximately five of these birds during our stay in Chiapas. They frequented the trees near the streams and the laguna. Lea collected a female (ovary small) on March 30.

Mniotilta varia (Linnaeus) - Black and White Warbler. This species was a rare migrant in late March. We saw only two individuals, one of which Lea collected on March 28.

Dendroica auduboni (Townsend) - Audubon's Warbler.

In the last week of March we saw only one, but on April 3 we

recorded three more. All were in winter plumage. A female with very small ovary taken on April 3 was close to the borderline in size (wing 73mm) between auduboni and memorabilis.

Dendroica virens virens (Gmelin) - Black-throated Green Warbler.- This was the most common transient warbler in the vicinity during late March and early April. We saw it frequently among willows at the laguna. All individuals which we observed closely were in mixed plumage. Two specimens, a male and a female collected April 2 and March 29 respectively, were molting rather heavily around the throat and head.

Oparrornis tolmiei (Townsend) - Macgillivray's Warbler. We encountered the species several times in low brushy growth near water. We noted that on occasion the bird would hop around on the ground beneath the bushes. Edwards collected a molting specimen at the laguna on March 29. The gonads were shot away, but in plumage the bird was a male.

Chamaethlypis poliocephala palpebralis (Ridgway) - Mirador Yellow-throat. This species was uncommon but we found at least three pairs established in the dry grassy fields. They were very shy and difficult to find when approached closely. However, from a distance they could be spotted readily by their unusual call-notes and song. The call-notes seemed somewhat goldfinch-like and the song was reminiscent of that of an Indigo Bunting.

Our single male specimen (March 29) has prominent yellow and white markings on the upper and lower eyelids, and is quite long-tailed. The black of the lores does not extend far above and below the eye. Though the single feature of the color

around the eye is now recognized to be insufficient basis for racial differentiation, the combination of characters exhibited by our specimen places it closest to palpebralis.

Icteria virens virens (Linnaeus) - Yellow-breasted Chat. We saw several during the last few days of March and the first two days of April around the streams and the laguna. They were not calling, so were not as conspicuous in that respect as in their eastern United States breeding grounds. Neither, however, did they seem so secretive and elusive. We were able to observe them with little difficulty.

A female taken March 29 was typically virens in tail and wing proportions (tail 73.5mm, wing 75.5) and in the restriction of the white malar line.

Wilsonia pusilla pileolata (Pallas) - Northern Pileolated Warbler. We recorded this species only once, when Edwards shot one in the sweet gum forest. It "chipped" occasionally as it fed in the smaller trees about fifteen feet from the ground.

Myioborus miniatus hellmayri van Rossem - Pacific Orange-bellied Redstart. We saw several at the cafetal and Lea collected a male (testes somewhat enlarged). On April 5 and 6 we found them to be common in the sweet gum forest. Frequently two or three males could be heard singing at once.

Our specimen has much more white in the tail than intermedius and is too orange below for that race.

Basileuterus culicivorus culicivorus (Lichtenstein) - Lichtenstein's Warbler. We saw this warbler at the cafetal, and there Edwards collected a male with much enlarged testes on March 27. Around the división it was the most common warbler,

being encountered in greatest numbers in the heavy undergrowth of the sweet gum forest. It was very active, but did not sing as much as Myioborus miniatus.

Basileuterus rufifrons rufifrons (Swainson) - Rufous-capped Warbler. Edwards shot a male in breeding condition in the scorched weeds just south of the división on April 5. Its call-note was somewhat like that of a Myrtle Warbler. We did not record the species otherwise in Chiapas.

This specimen is quite long-tailed (63mm) but otherwise is typical rufifrons.

Cassiculus melanicterus (Bonaparte) - Mexican Cacique ("Sanate de Oro"). This spectacular bird was fairly common around the streams and rivers of the dry plateau. It was well known to the people of the hacienda, who remembered it as much for its peculiar and offensive odor as for its brilliant yellow and black pattern. It usually stayed far up in the trees, where it made a variety of strange noises, some of them quite similar to the twig-snapping and swishing sounds of Cassidix mexicanus. Lea shot the first one he saw on March 26. It was a male with somewhat enlarged testes. 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. We could not determine the origin of the odor.

Cassidix mexicanus mexicanus (Gmelin) - Great-tailed Grackle ("Clarinero"). Around the houses and the farmyards this was the most abundant and conspicuous bird, but it was not to be found in the dry pine woods and higher hills away from human habitations. It was to be seen and heard almost continu-

ously, flying about and making many strange noises. We saw birds carrying nesting material in early April, nesting and roosting in thickly leaved trees around the ranch house.

A male brought in by young Jaime del Piño was in breeding condition. The wing (205mm) is large even for mexicanus, but otherwise the bird is typical.

Icterus spurius (Linnaeus) - Orchard Oriole. We saw several of both sexes in late March and early April, always near water. Lea secured a fully adult male (testes very small) on April 2.

Icterus wagleri wagleri Solater - Wagler's Oriole. We recorded this species only once on April 1, when Lea collected an immature female along the Río Monserrate behind the ranch house. It was not in breeding condition.

Icterus sclateri formosus Lawrence - Oaxaca Oriole ("Calandria"). Though we seldom saw orioles far from water courses on the plateau, Lea shot a male of this species on March 25 about 400 yards from the nearest stream. This is our only definite record for the species, but probably it was not uncommon. Small flocks of large orioles which we very frequently encountered along the rivers consisted of either this species or the very similar Icterus gularis, or possibly both, but we did not with certainty distinguish them in the field. The individuals of these flocks were not singing at that time, but scolded and called and frequently chased each other about. They had not begun nest construction, and we found no old nests. Our specimen of Icterus sclateri was not in breeding condition. It is less extensively streaked with

yellow on the back than any of a large series from Chiapas that we examined.

Sturnella magna alticola Nelson - Highland Meadowlark. We saw about a half-dozen during our two weeks in Chiapas. They were in the grass-grown upland fields. We heard them singing on occasion, usually a song almost identical to that of our Eastern Meadowlark. One individual's song, however, tended slightly toward that of a Western Meadowlark in rhythm and quality.

An adult female taken April 3 had a very slightly enlarged ovary. We assign it to the race alticola of Nelson as defined by Griscom (1934) and listed by Hellmayr (1937).

Piranga rubra rubra (Linnaeus) - Summer Tanager. We saw only a few of these tanagers. A male collected on March 30 was in mixed red and yellowish plumage. It is typical of rubra in its small size (wing 92mm, tail 71).

Piranga flava dextra Bangs - Eastern Hepatic Tanager. We recorded this species frequently in the heavy tree growth along the streams and rivers, on the sparsely wooded pine ridges and in the dense growth around the división. Its occurrence near water was probably just wandering from nearby open pine woods. Several times we saw males in completely red plumage singing in the tree-tops. One male taken on April 22 was colored much like a female, but somewhat more orange on the throat and top of the head. It had been singing persistently, and its testes were slightly enlarged. Another male, in red plumage, and two females all had somewhat enlarged gonads.

One of the females was in company with a red male.

Our specimens match a small series of dextra in coloration and are typical of that race in their small size.

Piranga leucoptera leucoptera Trudeau - White-winged Tanager. Lea saw a pair at the cafetal on March 27 and secured the female. Its ovary was somewhat enlarged. The male was in bright red and black plumage.

Chlorospingus ophthalmicus ophthalmicus (DuBus) - Brown-headed Chlorospingus. We found the species rather common in the sweet gum forest. The birds often chased each other about in the thick undergrowth while making a chatter of rapidly repeated sibilant notes. Their songs and call-notes were quite high-pitched also.

Edwards collected two, one about thirty feet up in a tree and the other close to the ground where they were usually found. The male was in breeding condition but the female had a very small ovary. These specimens are readily separable from a large series of postocularis in being ^{distinctly} browner on the forehead, crown, nape and auriculars.

Saltator atriceps peeti Brodkorb - Peet's Black-headed Saltator. In heavy growth near the streams we found this Saltator regularly in small numbers. It was difficult to observe as usual, but its loud staccato calls betrayed its presence and identity. Lea shot one, a female with enlarged ovary, on March 31.

Our specimen is closest to the race peeti, described by Brodkorb (1940, Auk, 57:548-549), being even larger than the maximum of the series which he examined in describing the race.

For the present at least our bird should be considered merely an extreme example of pesti, extending the range of that race to the Atlantic side of the Continental Divide, about forty miles northwest of the previously defined westerly limit of its range at Tonalá.

Pheucticus ludovicianus (Linnaeus) - Rose-breasted Grosbeak. We saw this species only on the last two days of March; first when Edwards saw a flock of four individuals, some in partial molt, and again when Lea took a female.

Passerina cyanea (Linnaeus) - Indigo Bunting. In the same places that we found Blue Grosbeaks we often encountered mixed flocks of Indigo Buntings. Sometimes the two species were in the same flock or in two slightly separated groups. On March 26 Edwards took a male in mixed plumage.

Passerina ciris pallidior Mearns - Western Painted Bunting. Lea took a male in bright breeding plumage near the division on April 6. We place it with pallidior primarily on the basis of its large size (wing 74mm, tail 59). It is somewhat intermediate in coloration.

Ammodramus savannarum perpallidus (Coues) -- Western Grasshopper Sparrow. On April 3 Edwards took a female from beneath a barbed-wire fence on the edge of a dry field on the plateau, our only record for the species in Chiapas. Our specimen is intermediate between pratensis and perpallidus, closer to the former in darker, less buffy coloration above and slightly smaller size (wing 61mm, tail 45.5), and more like the latter in having a slender bill.

Aimophila ruficauda lawrencii (Salvin and Godman) -
Tehuantepec Ground Sparrow. We saw it almost daily, usually
in small flocks, in the sparse, dry mesquite growth both in
the stream valleys and in the upland fields. The common call-
note of the species was extremely high-pitched. A male taken
on March 25 was not in breeding condition.

Aimophila rufescens rufescens (Swainson) - Rusty Sparrow.
In thick brush near the division Edwards collected a female of
this species on April 6. It had an unenlarged ovary.

Compared with topotypes of Brodkorb's new race cinerea
(Brodkorb, 1940, Auk, 57:549) from near this locality, our
bird is much buffier below and much darker and more heavily
marked above. It is slightly shorter winged (67mm) than
typical rufescens but it is closest to that race.

Melospiza lincolni lincolni (Audubon) - Lincoln's
Sparrow. We saw four Lincoln's Sparrows on the last three
days of March, our only records for the species in Chiapas.
A female collected by Lea on March 29 belongs to the eastern
race.

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