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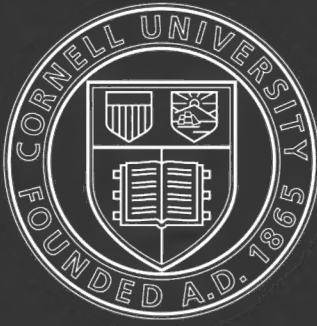
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Birds of western and northwestern Mexico



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BIRDS OF WESTERN AND NORTHWESTERN MEXICO.

BASED UPON COLLECTIONS MADE BY
COL. A. J. GRAYSON, CAPT. J. XANTUS, AND FERD. BISCHOFF.

By GEORGE N. LAWRENCE.

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IX. THE BIRDS OF WESTERN AND NORTHWESTERN MEXICO, BASED UPON COLLECTIONS MADE BY COL. A. J. GRAYSON, CAPT. J. XANTUS AND FERD. BISCHOFF, NOW IN THE MUSEUM OF THE SMITHSONIAN INSTITUTION, AT WASHINGTON, D.C. BY GEO. N. LAWRENCE.

THE subjoined catalogue is the result of an examination of several collections of birds, made in Western and Northwestern Mexico within the past few years, and sent to the Smithsonian Institution for determination.

The largest and most valuable were made by Col. Grayson, principally in the vicinity of Mazatlan, where he resided, from which place, however, he diverged in several directions; the large number of species obtained by him give evidence of his great perseverance and devotion to the cause he had espoused. The next in importance are the collections of Capt. Xantus, made farther to the south, in the regions of Colima and Manzanilla. Mr. Bischoff collected only near Mazatlan. A few specimens were sent by Dr. Palmer from Guyamas, in the southern part of Sonora. There are no specimens from north of this last point, the extreme northwestern portion of Mexico is, in fact, a "terra incognita," zoologically speaking.

All these collections were submitted to me, for the purpose of giving a catalogue of them, by the officers of the Smithsonian Institution, who at the same time kindly placed in my hands the various notes and journals of Col. Grayson, together with very full biographies by him of many species of birds, from which I was authorized to make such extracts as I thought would add to the interest of the catalogue.

These biographies are exceedingly graphic and of great value, as they elucidate the economy of many species, of which comparatively but little was heretofore known; they show him to have been an indefatigable and close observer of the habits of birds. As a field naturalist he should take rank with Audubon. The biographies, although of great interest, are too extended to be copied at length, as the limit of this paper admits only of partial extracts. They are accompanied by one hundred and fifty plates of Mexican birds, of life size, faithfully drawn and colored. It was the intention of Col. Grayson to prepare full histories of all the species of birds of Western Mexico, together with characteristic drawings, for the purpose of publication at some future time, but unfortunately the completion of this design was prevented by his untimely death.

Although the list of species is quite large for a local fauna, Col. Grayson expected to add many to it, as he wrote in April, 1869, just prior to his unfortunate visit to the Isabel Islands, as follows: "But the field is not yet exhausted; before the end of this year I hope to be able to add many more species, especially from the region of the Sierra Madres Mountains in these latitudes, and which I have not yet explored."

There are no notes or observations from any collector, except from Col. Grayson, all of which are enclosed in quotation marks.

Fam. TURDIDÆ.

1. *Turdus ustulatus* Nutt.

“ “ Proc. Bost. Soc. of N. H., XIV., p. 276.

Tres Marias, Jan., 1865, Grayson.

“I found this bird quite abundant on the Tres Marias Islands when I was there in the months of January, February, and April. It was very shy and timid; this fact alone led me to believe that it was a winter visitant to this locality—a stranger.

“Since I made its discovery in this remote locality, I find that Prof. Baird, in his description of the above-named species (Rev. of Am. Birds, p. 18), states as follows: ‘This species hitherto has not been noted as found outside the limits of Washington Territory and northern Oregon, nor as far east as the Rocky Mountains—the most eastern point being Chiloweyuck, (July 3, 1859, Dr. Kennerly), where it was found breeding very abundantly.’

“The important fact that it selects the Tres Marias Islands for its winter migrations, and is nowhere found on the main-land in this vicinity, is of extraordinary interest.”

2. *Turdus grayi* Bp.

“ “ Proc. Bost. Soc. of N. H., XIV, p. 276.

Tepic, Tres Marias, Grayson.

“At times during the winter months it is abundant in the Tres Marias. Frequently met with in the *tierras calientes* of the main-land; I found it breeding near Tepic in the month of May. It is gregarious and semi-migratorius. There are many points of similitude in this species and our *T. migratorius*, especially in its habits, but the colors in the plumage are very distinct. It is a Mexican species and found in various localities of this region.”

3. *Turdus flavirostris* Sw.

“ “ Proc. Bost. Soc. of N. H., XIV, p. 276.

Mazatlan, Tres Marias, Grayson; Plains of Colima, Xantus.

“Is also abundant on the Marias as well as the main-land, and may be found in either locality throughout the year. It is an inhabitant of the woods, gregarious and semi-migratorius; passing from one part of the country to another in quest of the different kinds of berries, which are its chief subsistence. The resemblance between this and our common robin of the Atlantic States is quite appreciable.”

This species appears to be peculiar to western Mexico. It seems to be rare in European collections, as Messrs. Sclater and Salvin state (P. Z. S., 1870, p. 550) that a specimen from Mexico submitted to them by Mr. Boucard, was the first to come under their notice in collections from that country. Numerous specimens are in Col. Grayson's collection from the Tres Marias and Mazatlan. It abounds also in the vicinity of Tehuantepec, whence Prof. Sumichrast has sent many very fine examples.

4. *Melanotis cærulescens* (Sw.).

“ “ Proc. Bost. Soc. of N. H., XIV., p. 275.

Mazatlan, Tepic, Tres Marias, Grayson; Plains of Colima, Xantus.

“Very abundant in the Islands of the Marias, and one of the most interesting songsters of that locality, where it is very docile, inhabiting the thick woods. Upon the main-land, in the vicinity of Mazatlan, it is not so common, and is very shy.”

5. *Harporhynchus curvirostris* (Sw.).

Tepic, Grayson; Mazatlan, Xantus, Bischoff.

"A common resident in this locality and the high central plains to the city of Mexico."

6. *Harporhynchus graysoni* Baird.

" " Proc. Bost. Soc. of N. H., xiv., p. 298.

Island of Socorro, Grayson.

"Like all birds of the genus, this is a charming songster; I found it to be quite tame, seeming to be fond of our company, and while in the lonely solitudes of its home we were cheered both by night and by day with its sweet melody."

7. *Mimus polyglottus* (Linn.).

" " Proc. Bost. Soc. of N. H., xiv., p. 277.

Mazatlan, Grayson, Bischoff; Tres Marias, Grayson.

"Not common in the Tres Marias, but resident there. It is identical with specimens from the main-land, whence it doubtless found its way to the islands."

Fam. SAXICOLIDÆ.

8. *Sialia mexicana* Sw.

" " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 329.

Mazatlan, Grayson; Plains of Colima, Xantus.

Fam. SYLVIIDÆ.

9. *Polioptila cærulea* (Linn.).

Mazatlan, Bischoff; Tonila, Xantus.

10. *Polioptila nigriceps* Baird.

Mazatlan, Tepic, Grayson.

"Found in the low brushy woods at all seasons."

Fam. TROGLODYTIDÆ.

11. *Rhodinocichla rosea* (Less.).

" " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 329.

Mazatlan, Grayson; Sierra Madre, Xantus.

"I have not been able to discover this bird in any other locality than the thickly wooded district bordering the Rio Mazatlan; here it seems to remain throughout the year, concealing itself in the densest brush, where its volutuous and melodious notes are often heard when the bird would be invisible."

The proper family affinity of this remarkable species is not yet definitely settled. Dr. Finsch, l. c., has it under Dendrocolaptidæ, and Mr. Gray in his "Hand List of Birds" places it among the Turdidæ. Col. Grayson states that its habits are very similar to those of the Thrushes. Possibly it should occupy an independent position between the Thrushes and Wrens; its great vocal powers would seem to exclude it from Dendrocolaptidæ.

12. *Campylorhynchus humilis* ScL.

Mazatlan, Bell; Colima, Xantus.

13. *Catherpes mexicanus* (Sw.).

Tepic, Guadalajara, Grayson.

"Usually met with in the interior, inhabiting the ruins and houses of towns and cities. Not found at Mazatlan or in any part of the coast region."

14. *Thryothorus felix* Scl.

" " Proc. Bost. Soc. of N. H., XIV, p. 278.

Mazatlan, Tres Marias, Grayson.

"The woods of the Tres Marias Islands are well supplied with songsters, in which the ever cheerful and happy song of the wren is often heard to mingle at all hours of the day. Like nearly all the birds of these islands, it is very docile, almost suffering itself to be trodden upon, when it is busily occupied in searching among the dry leaves on the ground for its insect prey, indeed most of the specimens procured I killed with a long switch, as I did the Hummers. It seemed to be constantly occupied in searching for insects, occasionally mounting some low branch, often two together, each vying with the other in their melodious rapture, for a few moments at a time, when they would again resume their vocation."

15. *Thryothorus sinaloa* Baird.

Mazatlan, Sinaloa, Grayson; Colima, Xantus.

"This little wren is common from Sinaloa to Tehuantepec. Its nest is generally built in the drooping branches of a thorn tree, thus giving the abode of the young some protection against the innumerable ants and other insects that would otherwise infest it. Most of its congeners build their nests in hollow logs, among roots of trees, etc. The nest is partly suspended from the branches and built of fine grass. The eggs are usually five in number, and marked with small specks of a brownish color."

16. *Thryothorus bewickii*, var. *leucogaster* Gould.

Guadalajara, Grayson.

"I found this wren along the stone fences and hedges near Guadalajara, but have not seen it near the Pacific coast. It is doubtless a constant resident in many localities in the high central plains."

17. *Troglodytes insularis* Baird.

" " Proc. Bost. Soc. of N. H., XIV, p. 299.

Island of Socorro, Grayson.

"This diminutive species is very abundant and well distributed over the island. As in other members of this family its attire is modest and unpretending, but its song may be heard throughout the day, either among the trees or brush covered rocks that crop out everywhere. I never tired watching them climbing about over old logs, or the trunks of standing trees, creeper like, and often turning up the leaves on the ground at our feet in search of food. In the midst of all this busy occupation for subsistence it frequently stops and mounts a branch or twig to pour forth its cheerful little song, which is of considerable volume for a bird so small."

18. *Cistothorus palustris* var. *paludicola* Baird.

Mazatlan, Grayson.

Fam. MOTACILLIDÆ.

19. *Anthus ludovicianus* (Gm.).

Mazatlan, Grayson.

"Common during winter months."

Fam. SYLVICOLIDÆ.

20. *Seiurus auricapillus* (Linn.).

Mazatlan, Grayson.

"I have met with this species only during the winter months, from November to April. It inhabits the thickest woods, and is very shy and solitary, as well as silent."

21. *Seiurus ludovicianus* (Aud.).

Mazatlan, Grayson; Colima, Xantus.

"This little bird is usually found about stagnant pools, or solitary brooks. It appears to me to be the same species which I years ago noticed about the swamps and river side in Louisiana. It is not common in this locality."

22. *Mniotilta varia* (Linn.).

Mazatlan, Grayson; Colima, Xantus.

"I found this bird in the Sierra Madres in December, and also in the Coast Range in January and April. Not common. Its habits are much like the Nuthatches — inhabiting the older woods."

23. *Parula insularis* Lawr.

" " Proc. Bost. Soc. of N. H., xiv., pp. 278, 300.

Island of Socorro, Tres Marias, Grayson.

"Abundant upon the Tres Marias Islands, and a constant resident; also upon the Island of Socorro, two hundred and fifty miles west-south-west of the Tres Marias. I have never met with it upon the main-land.

"It is remarkable that this bird should be found upon the widely separated islands above stated, and not upon the main-land adjacent to the Marias."

24. *Geothlypis trichas* (Linn.).

Mazatlan, Tepic, Grayson.

"A common species from October until the latter part of June. They migrate to the high central plains to breed. I have seen it in the month of July in the vicinity of Tepic."

25. *Geothlypis poliocephala* Baird.

Mazatlan, Grayson.

26. *Geothlypis philadelphia*, var. *macgillivrayi* (Aud.).

Mazatlan, Grayson.

"I have met with this species in October, December, April and September, but have not seen it during the summer months."

27. *Dendroeca auduboni* (Townsend.).

Tepic, Grayson; Mazatlan, Bischoff; Tonila, Jalisco, Xantus.

"Common, and widely distributed in the winter months; arrives in December and departs in April."

28. *Dendroeca aestiva* (Gm.).

Mazatlan, Grayson; Colima, Xantus.

29. *Dendroica vieilloti* Cass.*Sylvicola vieilloti* Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 329.

Mazatlan, Guadalajara, Grayson.

"A summer visitant, and doubtless comes from Central America, as it is known in Costa Rica, north of which locality Prof. Baird states that it has not previously been recorded. From the month of April until September it is often met with, inhabiting the mangrove evergreens in this locality."

30. *Dendroica dominica* (Linn.).

Tepic, Grayson; Colima, Coahuylana, Xantus.

"Shot in the vicinity of Tepic in the month of December, 1865, not common, and I believe a winter visitant."

31. *Myiodytes pusillus* (Wils.).

Guadalajara, Tepic, Grayson; Colima, Xantus.

"Common in some localities during the winter months. I found it near Guadalajara in May."

32. *Basileuterus rufifrons* (Sw.).

Sierra Madre, Grayson.

"Procured in the Sierra Madre in the month of April."

33. *Euthlypis lachrymosa* (Bp.).

Mazatlan, Grayson.

"Unlike the true Flycatchers it does not remain quiet a moment, but is constantly hopping about over old logs, on the ground, in the brush and low branches of trees, its tail spread; whilst thus in search of insects not unlike *Granatellus*. It is not a common species in this locality, and I have only met with it in the dark woods near Mazatlan River. All the specimens were procured in the winter months."

34. *Setophaga picta* Sw.

Sierra Madre, Grayson.

"This is a beautiful species, and has all the peculiarities in its habits of the Warblers. It is always very busy, actively hopping among the branches in search of insects, at the same time uttering a chirping note. The tail, which is ample and gently graduated, is often spread just enough to show distinctly the broad white tips of the outer feathers, contrasting beautifully with the decided black of the rest of the tail. Not abundant."

35. *Setophaga miniata* Sw.

Sierra Madre, Grayson.

"This is a rare species; I have only seen two or three individuals high up in the mountains. Its habits are like the true Flycatchers, waiting quietly on its perch for passing insects."

36. *Granatellus francescæ* Baird.

" " Proc. Bost. Soc. of N. H., XIV, p. 278.

Tres Marias Islands, Grayson.

"This beautiful little species adorns the woods of the Tres Marias Islands, to which it appears to be peculiar."

37. *Granatellus venustus* Dubus.

Colima, Xantus.

Fam. HIRUNDINIDÆ.

38. *Progne subis* (Linn.).
Guadalajara, Tepic, Grayson.

"I found it breeding in Tepic, in the month of May, also in Guadalajara; they were nesting under the eaves of the houses, or in the water spouts. It is seldom seen in the locality of Mazatlan, and then only accidental and migratory, flying very high."

39. *Hirundo horreorum* Barton.
Guadalajara, Tepic, Grayson.

"Very abundant in Tepic, where they breed in May and June under the roofs of houses, in the corridors; also found in Guadalajara. Only accidental on the seacoast in September and October, apparently migrating."

40. *Tachycineta bicolor* Vieill.
Mazatlan, Grayson.

"Specimen shot in September, not common."

41. *Tachycineta albilinea* Lawr.
Mazatlan, Grayson.

"This handsome little swallow is common at Mazatlan, where it is a constant resident, one among the few swallows that is not migratory. At all seasons of the year its twitter may be heard about the eaves of the tile houses or the spacious corridors of the peculiarly constructed Moorish Mexican haciendas. We often see it skimming along the streets, at times almost touching the pavement in its pursuit of flies. Its customary haunts are near or about large towns or haciendas, and rarely have I seen it far from some human habitation. In April it commences to form its nest, usually beneath the eaves of houses or in holes in the wall, often in the hollow tubes for conveying the water from the flat roofs of the buildings. They are very sociable in their habits, and may often be seen in considerable numbers perched upon the roofs of the houses."

42. *Petrochelidon lunifrons* Say.
Mazatlan, Tepic, Grayson.

"I found this species breeding in the banks of the Mazatlan River in May; it appears to be a summer visitant, as I have not observed it in the winter months."

In Col. Grayson's list of swallows he has the name of "Bank Swallow," but there are no specimens by which to determine the species referred to; it may be either *Cotyle riparia*, *Stelgidopteryx serripennis* or *S. fulvipennis*, neither are there any notes to elucidate the question. *C. riparia* has been obtained at Tehuantepec, by Prof. Sumichrast, but neither of the others.

Fam. VIREONIDÆ.

43. *Icteria virens* var. *longicauda* Lawr.
" *longicaudata* Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 331.
Mazatlan, Tepic, Grayson.

"Common in brushy localities from October to April."

44. *Vireosylva flavoviridis* Cassin.

Mazatlan, Grayson; Rosario, Xantus.

"Not a common species in the locality of Mazatlan, usually met with in the mangrove swamps; specimens were shot by me in April and June. I have found them more abundant among the evergreens on Holder-ness Island. None are seen after August, migrating probably to Central America after breeding."

45. *Vireo solitarius* (Wils.).

Mazatlan, Grayson.

"This species was shot in April near Mazatlan; I have only seen one specimen."

46. *Vireo plumbeus* Coues.

Plains of Colima, Xantus.

47. *Vireo atricapillus* Woodhouse.

Mazatlan, Grayson.

48. *Vireo ochraceus* Salvin.

Mazatlan, Grayson.

49. *Vireo hypochryseus* Scl.

" " Proc. Bost. Soc. of N. H., xiv., p. 281.

Tres Marias Islands, Grayson.

Fam. LANIIDÆ.

50. *Collurio ludovicianus* var. *excubitoroides* Sw.

Mazatlan, Grayson; Colima, Xantus.

"Common from October to April, probably migrates to the high central plains in summer."

Mr. J. A. Allen (Bull. Mus. Comp. Zool., Cambridge, II., p. 270) considers the "so-called *C. excubitoroides*" not to be specifically distinct from *C. ludovicianus*.

Messrs. Dresser and Sharpe (Proc. Zool. Soc., London, 1870, p. 595) express themselves as being similarly convinced by an examination of "thoroughly typical *L. excubitoroides* and *L. ludovicianus*." They state in addition that:—"In the British Museum, there is a specimen sent to this country by Prof. Baird, under the name of *Lanius elegans*, from Mexico. This bird was kindly shown to us by Mr. G. R. Gray; and we were glad to see it, as it confirms our opinion that the *Lanius elegans* of the American authors is nothing more than *L. ludovicianus*."

I was told by Prof. Baird that the specimen of *Lanius* sent to the British Museum labelled *L. elegans* must have been so named inadvertently by some of the employés of the Smithsonian Institution, as the only specimen he supposed to be that species, is in the Museum of the Philadelphia Acad. of Sciences. On a re-examination of that specimen, he came to the conclusion that it was a local race of *Collurio ludovicianus*, and in his forthcoming work on the Birds of North America, has described it under the name of *C. robustus*.

Under the species *Lanius lahtora*, Messrs. Dresser and Sharpe, l. c., p. 598, say, "We have the advantage of possessing in this country the type specimen of *Lanius elegans* of Swainson, which is preserved in the national collection. On a close examination this bird

seems to be nothing more or less than *Lanius lahtora*, to which species we have accordingly referred it. Whether the identical specimen described really came from the fur countries as stated, can only be determined by further investigation in the locality whence the type specimen is said to have come; and this question will, doubtless, be set at rest some day by the American ornithologists. It seems possible to us that the shrike in question may have come from some other locality altogether, or it may be a straggler from Northern Siberia into Northwestern America."

Lanius lahtora was first described from the East Indies, but appears to have a wide range, being found to the west in Northern Africa and to the north as far as Siberia. Whether introduced into the United States fauna erroneously or really obtained in the fur countries, is a question of much interest, which may possibly be settled by the investigations now in progress in Alaska, by Messrs. Dall and Elliott.

Fam. AMPELIDÆ.

51. *Ptilogonis cinereus* Sw.

Sierra Madre near Colima, Xantus.

52. *Myiadestes obscurus* Lafr.

" " Proc. Bost. Soc. of N. H., xiv., p. 277.

Tonila, Jalisco, Xantus; Tres Marias, Grayson.

"The Hilgaro, as the Mexicans call it, is their nightingale; next to the mocking bird it is the favorite caged songster in that land where birds of every hue and song are found, and where the sweetest singers are sought for and caged to enliven the monotonous hours of some fair senorita of 'La casa blanco,' or 'La casa grande.'

"The notes of this bird, when once heard, can never be mistaken for those of any other; they are peculiar and approach nearer to the tunes of a musical box than perhaps do those of any other known species. I have listened for hours to its exceedingly varied notes, both in the woods and when caged, and never became weary of its strange, but melodious song.

"This species inhabits the mountainous regions where the woods are the largest and most dense. I have never met with one in the low lands. At a place called the 'Barranca,' between Tepic and Guadalajara, I found them quite common but very shy. Its food consists mainly of insects and berries, but in cages it is fed upon 'masa,' Indian corn made into dough and strongly seasoned with Chili peppers; various kinds of fruit are also given it."

Fam. TANAGRIDÆ.

53. *Euphonia affinis* (Less.).

Mazatlan, Bischoff; Sierra Madre, Xantus.

54. *Pyrranga æstiva* var. *cooperi* Ridgeway.

" " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 338.

Mazatlan, Grayson.

"This species makes its appearance here during the winter months. I have seen it late in the spring, but not in the summer. Not common."

55. *Pyrranga bidentata* Sw.

“ “ Proc. Bost. Soc. of N. H., xiv., p. 281.

“ “ Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 338.

Tres Marias Islands, Grayson.

“It is quite evident that all the species of birds found inhabiting an island in the ocean, in which they are constant residents or peculiar to the locality, necessarily become more numerous owing to their restricted territory, than those found upon the continent. Nearly all the species that are local to Socorro and the Islands of the Tres Marias, I found to be abundant. This *Pyrranga* is no exception to the rule; it is a common and handsome species, and I have not met with it at any other place than the Marias. Of its further geographical distribution I am not informed; when I discovered it I was strongly impressed that it was an undescribed species, and peculiar to the Tres Marias. Specimens sent to Prof. Baird for determination however, do not make good these facts; I received from him its scientific name, but no further intelligence regarding it.”

As is well known, Col. Grayson erred in supposing this species to be peculiar to the Tres Marias. It is given by Sclater from Jalapa and Volcan de Fuego, Guatemala; it is also found abundantly in Costa Rica; none are in Prof. Sumichrast's large collection from Southwestern Mexico.

56. *Pyrranga hepatica* Sw.

Sierra Madre, Grayson.

“I discovered this species to be quite frequent in the Sierra Madre Mountains, on their western slope between Mazatlan and Durango in December, but I have never met with it in the *tierras calientes* proper. It seems to be a mountain species.”

57. *Saltator plumbeiceps* Baird, Ann. Lyc., N. Y., viii., p. 477.

Mazatlan, Tepic, Grayson; Plains of Colima, Xantus.

“This finch inhabits the forests and breeds in the spring months, during which time it is in fine song; it does not migrate and is a common species in the vicinity of Mazatlan, San Blas and Tepic. The nest is slightly made of small dry twigs and lined with fibrous roots; the eggs are from three to five, of a pale blue color with delicate black hieroglyphic marks on the large end.”

There are two specimens in Col. Grayson's collection marked *Saltator francescæ*, as possibly being a distinct species. On examination, I have concluded that they are the young of *S. plumbeiceps*, although quite different in color; much the same variation occurs in the adult and young stages of plumage of *Saltator grandis*, the young of which is *S. icterophrys* Lafr.

The two specimens under consideration are olive green above, as are also the wings and edges of the primaries; in one the under plumage and superciliary stripe are yellow; in the other the superciliary stripe and chin are white, the under plumage less yellow, more tawny, and the fore part of the crown plumbeous; this last, therefore, has in part assumed the adult dress of *S. plumbeiceps*, in which there are no green or yellow colors.

Fam. FRINGILLIDÆ.

58. *Pheucticus chrysopheplus* (Vig.).

“ “ Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 339.

Mazatlan, Grayson, Bischoff; Rio de la America, Xantus.

“It is rather common in the vicinity of Mazatlan, where its cheerful and voluminous song is often heard in the woods. It does not migrate.”

This species, found only in Western Mexico, has until recently been considered the same as the South American *P. chrysogaster*. Dr. Finsch, l. c., gives a full account of the different stages of plumage of this species, and by comparison with the descriptions and figures given by Lesson, and Jardine and Selby of *P. chrysogaster*, points out their distinguishing characters. He says, — "The Mexican variety is unquestionably that described by Vigors, which cannot be united with *P. chrysogaster* Less., as has hitherto been supposed. Specimens from Peru or Venezuela, which alone can decide that point, are unfortunately not at my command at present."

I have a male specimen of *P. chrysogaster* in perfect plumage, from Ecuador, the difference between which and *P. chrysopheplus* is very striking, especially in regard to size, the yellow coloring of the Mexican bird is much deeper, the sinuated portion of the outer primaries is bordered with white, while in *P. chrysogaster* the ends of the primaries are wholly black, and the quills of the latter are of a deeper black; in the other white markings on the wings, and those of the tail, the two species are much alike; the inner webs of the outer three tail feathers are largely white at their ends in each. In *P. chrysogaster* there is a broad black band across the back, the lores and lower eye-lids are black, the occiput and hind neck are somewhat intermixed with black, and the sides under the wings are sparingly and faintly marked with blackish bars; the back of *P. chrysopheplus* has a few of the feathers marked with black, but the plumage of the lores, the hind neck and under the wings is immaculate.

The two measure as follows: —

P. chrysopheplus. Length (fresh), 10 in.; wing, 5; tail, $4\frac{1}{4}$; tarsus, $1\frac{1}{8}$; bill, high at base, $\frac{3}{4}$; wide at base, $\frac{1}{8}$.

P. chrysogaster. Length (skin), $7\frac{1}{2}$ in.; wing, $4\frac{1}{4}$; tail, $3\frac{1}{2}$; tarsus, $\frac{1}{2}$; bill, high at base, $\frac{1}{8}$; wide at base, $\frac{1}{8}$.

59. *Hedymeles ludovicianus* (Linn.).

Plains of Colima, Xantus.

60. *Hedymeles melanocephalus* (Sw.).

Mazatlan, Grayson; Plains of Colima, Xantus.

"Specimens shot near Rio Mazatlan in February, and near Guadalajara in May."

61. *Cardinalis virginianus* var. *igneus* Baird.

" " Proc. Bost. Soc. of N. H., xiv., p. 281.

" " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 339.

Mazatlan, Tres Marias, Grayson.

The Tres Marias and Mazatlan form proves to be *C. igneus* Baird. I had no specimen at the time of preparing the Tres Marias list, but took the name as given in Col. Grayson's notes.

62. *Cardinalis virginianus* var. *carneus* Less.

Sierra Madre, Xantus.

63. *Pyrrhuloxia sinuata* (Bp.).

Mazatlan, Grayson.

"Specimens shot in February and April, not common."

64. *Guiraca caerulea* (Linn.).

Coccyborus caeruleus Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 339.

Mazatlan, Tepic, Grayson; Plains of Colima, Xantus.

"The Blue Grosbeak appears here from October to April; I procured specimens, however, in the locality of Tepic in the month of June. Tepic is in the *tierra templada*, and the climate is cooler than the Mazatlan region. It is my opinion that the birds migrate to the high central plains of Mexico to breed."

65. *Guiraca parellina* (Licht.).

Manzanilla Bay, Xantus.

66. *Spermophila torqueola* Bp.

"*atriceps* Baird, Ann. Lyc. N. Y., VIII., p. 479.

Mazatlan, Grayson, Xantus; Plains of Colima, Creston, Xantus; Tepic, Grayson.

"Our present bird, though diminutive in size and of a subdued, modest and becoming dress, possesses those qualities of cheerfulness and a delicately sweet little song, which always render it attractive and interesting. They are constant residents in the State of Sinaloa, near the coast, and in the vicinity of Tepic they are quite numerous. I also saw them in Tehuantepec.

"They do not associate in flocks, but often in pairs, sometimes a few may be seen in the same locality. I always found them inhabiting the openings, in which there is an abundance of low bushes, weeds and grass, the small seeds furnishing their principal means of subsistence.

"In the months of April, May and June the males are in full song. The nest is placed in a low bush, and compactly formed of fine roots, with but little lining; the eggs, five in number, are nearly white or very pale blue. Two broods are raised in a season and perhaps more, as I have found young birds just able to fly in October."

Mr. Sclater (Ibis, 1871, p. 6) decides that *S. atriceps* Baird, is *S. torqueola* Bp., in immature plumage.

67. *Volatinia jacarina* (Linn.).

Mazatlan, Grayson; Mazatlan River, Mts. of Colima, Xantus.

"Common from the latter part of June to September, inhabits clearings with low brushwood and rank weeds; the male, during the breeding season, may be seen making frequent short flights or jumps from its perch on the top of a weed or bush, always returning to the same spot."

68. *Cyanospiza ciris* (Linn.).

Mazatlan, Grayson; Plains of Colima, Xantus.

"A winter visitant to this locality; specimens shot in February."

69. *Cyanospiza amœna* (Say).

Mazatlan, Grayson.

70. *Cyanospiza versicolor* (Bp.).

Mazatlan, Grayson.

"This beautiful little finch is quite a common species about the vicinity of Mazatlan, where it is a constant resident; I also found it at Tepic in the State of Jalisco. It appears to represent, on the Pacific slope, its more brilliantly plumaged ally of the Southern Atlantic States, the Nonpareil (*C. ciris*), which is only a winter visitor to this region. It has a sweet little song, which it often warbles in the morning and evening from the top of some bush or weed in hearing of its modestly attired mate. The plumage of the adult male is very pretty, the rich reddish-purple predominating upon the upper and lower parts, whilst the rump is con-

spicuous with a lustrous purplish-blue or lilac. The female, on the contrary, wears a plain brown dress, and were it not for her gorgeously attired spouse, would scarcely be recognized from some common little brown sparrow."

71. *Cyanospiza leclancheri* (Lafr.).
Sierra Madre, Rio de la America, Xantus.

72. *Euspiza americana* (Gm.).
Mazatlan, Grayson.

"This handsome wood sparrow is not common in this locality; only two specimens have been procured, male and female, which were shot in the month of August by my friend Mr. Brewington. They were found in the woods near Mazatlan, and appear to be arboreal in their habits."

73. *Zonotrichia leucophrys* var. *gambelii* (Nutt.)
Mazatlan, Grayson.

74. *Aimophila melanotis* Lawr.
Plains of Colima, Xantus.

75. *Melospiza lincolni* (Aud.).
Mazatlan, Grayson.

"Very common in the coast region in the winter months, and in the locality of Tepic at all seasons.

76. *Peuca æstivalis* var. *botteri* Scl.
Coturniculus mexicanus Lawr., Ann. Lyc. N. Y., VIII., p. 474.
Plains of Colima, Xantus.

77. *Coturniculus passerinus* (Wils.).
Mazatlan, Grayson.

"A winter visitant; not abundant."

78. *Embernagra chlorura* (Aud.).
Mazatlan, Grayson.

"A winter visitant, specimens shot from December to April, numerous in some localities. Its notes have a faint resemblance to those of the Towee finch; it passes much of its time among the weeds in old fields and in brushy places, feeding upon various kinds of seeds; I have seen it feeding upon the seeds of the silk cotton."

79. *Pipilo fuscus* var. *crissalis* Vigors.
Guadalajara, Grayson.

"This species I found quite abundant about Tepic, and in many places on the road to Guadalajara on the high central plains. I have not met with it nearer the sea-coast than Tepic, where it appears to be a constant resident."

80. *Pipilo erythrophthalmus* var. *carmani* Lawr.
" " " Ann. Lyc. N. Y., x., p. 7.
" " " Proc. Bost. Soc. of N. H., xiv., p. 299.
Island of Socorro, Grayson.

"I found this finch to be very abundant upon the Island and remarkably tame. It was by observing the habits of this bird that water—a small spring percolating beneath the boulders and loose rocks near the

tidal mark — was discovered; but for this incident we might have suffered greatly, long before the necessary article could have been found by us, as any one would have taken it to be sea-water which flows and ebbs to it, had we not seen our little friend in the act of drinking. No other water was discovered, although it doubtless exists in other places on the Island."

81. *Pyrgisoma rubricatum* Cab.

" *xantusii* Baird, Ann. Lyc. N. Y., VIII., p. 480.

Mazatlan, Grayson, Xantus; Plains of Colima, Xantus.

"Not an abundant species, although not an uncommon one in this locality. Inhabits chiefly the woods; resident all the year. I found it also in Tepic and San Blas regions."

82. *Chondestes grammaca* (Say).

Mazatlan, Grayson; Plains of Colima, Xantus.

"Arrives in September and departs in April; common."

83. *Carpodacus frontalis* (Say).

Guadalajara, Grayson.

"I found this species in the city of Durango in February, in Guadalajara in May, and in Tepic in December, May and June. It breeds in these localities; it does not visit the coast region."

84. *Chrysomitris psaltria* var. *mexicana* Sw.

" " Proc. Bost. Soc. of N. H., XIV, p. 282.

Tres Marias Islands, Grayson.

Fam. ALAUDIDÆ.

85. *Otocoris alpestris* var. *chrysolæma* (Wagl.).

" " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 341.

Mazatlan, Grayson.

Fam. ICTERIDÆ.

86. *Cassiculus melanicterus* (Bp.).

" " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 363.

Mazatlan, Grayson, Bischoff; Tepic, Grayson; Plains of Colima, Rio de Coahuana, Xantus.

"An abundant and common species and a constant resident; it is well distributed throughout the woods of the *tierra caliente*. They associate in flocks of from ten to thirty. Their long pensile nests are sometimes three or four feet in length. I found it equally abundant in Tehuantepec, but none in the Tres Marias Islands.

"It does not migrate except from one part of the forest to another. The Long-tailed Jay (*Colacitta collaei*) frequently accompanies them in their perambulations through the woods in quest of their insect prey, or various kinds of fruit upon which they subsist.

"Among the many curious objects which meet the eye of the traveller in the tropical regions of Western Mexico, are the long pendant nests he sees swaying in the breeze, attached to a small twig and frequently overhanging the path he is travelling. These are the nests of the Double-crested Oriole. Beneath the wide-spreading branches of the mimosa, acacia, higuero, or any large tree that affords an ample shade, may often be seen as many as half a dozen of these firmly woven structures, suspended in the air and moved by the slightest breeze. The material of which they are composed is generally a very long, coarse and tough grass,

selected with great care as to its elasticity and strength; sometimes narrow strips of the palm-leaf, and again I have seen some that were constructed of a slender and pliant kind of creeper, and, near the villages, twine and thread are sometimes mixed with grass. Any long and slender substance of a tough nature is selected by this ingenious weaver, to make secure its domicile against the storms of the Tropics. They are often a yard in length, with the entrance near the top, which is rather small and nearly closed when the bird is inside, and at the bottom of her pocket-shaped nest. A truly wonderful ingenuity is exhibited in the mechanism of these bird 'homes.' Apparently they seem to be loosely put together, admitting the air to pass freely through them, not unlike a net hammock; but any attempt to pull one of them apart, or detach it from the twig to which it is bound, is not easily accomplished without the aid of a knife.

"The building of this structure is performed by the female alone; the male only keeping watch whilst she is engaged inside, or accompanying her in searching for building material. The eggs of this species, usually five in number, are longer in shape than those of the other members of the Oriole family; their markings, however, are similar, the ground color being a pale blue, with numerous brownish-black spots and zigzag marks, some of which resemble letters and hieroglyphics written with a bad pen."

87. *Icterus spurius* var. *affinis* Lawr.

Mazatlan, Grayson; Plains of Colima, Xantus.

"Appears to be a winter visitant to this locality, although I procured both male and female in the latter part of August, 1865, possibly the early comers. It is not very common at any season."

88. *Icterus cucullatus* (Sw.).

Mazatlan, Grayson; Plains of Colima, Xantus.

"I have noticed but two examples of this species, both of which I procured, shot from the same tree; they were feeding upon the fruit of the wild fig (*Ficus americanus*), in company with other orioles (*I. pustulatus*). They are rare in this locality and new to me."

89. *Icterus wagleri* Sel.

" " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 338.

Tepic, Guadalajara, Grayson.

"In the large and beautiful garden and orchard attached to the spinning factory of Barron and Forbes in Tepic, I first met with this rare and pretty species. This lovely retreat is called Jauja, and is indeed just what its name implies, a garden of Paradise. It is situated on the banks of a clear running stream, that propels the machinery of the factory, a large enclosure to itself, with the limpid waters sweeping around more than one-half its length.

"Everything that art and taste could suggest has here been exhibited in the admirable distribution of nearly every kind of tropical fruit trees, as well as some of the northern ones; orange groves and mango, with their dark evergreen foliage, forming the most delightful and shady bowers, perfumed with the fragrance of innumerable native as well as exotic flowers, plantains, coffee,—really a wilderness of plants, kept in elegant order, among which gravelly walks lead in every direction; all of which appears as an oasis amid the thorny and scrubby brush peculiar to the surrounding country. A fit spot to attract the various species of birds for many miles around.

"In Jauja, where everything is conducted in a quiet and systematic manner, birds are never molested, but seem to form a part of the richly ornamented grounds in which they love to dwell; and in this genial clime, where frost and snows are unknown, they have no desire to leave it. Here they rear their young, and their voices are heard in their varied songs, every month in the year. My first visit to this spot was in the month of May (the commencement of the breeding season), when all the birds were in their finest song and feather. Such a busy scene, and such a medley of song, I have seldom witnessed. It seemed as though all the vocalists of the forest and field had collected here for a grand concert, a kind of national congress of musicians or May-day festival, each endeavoring to outvie his neighbor.

"This was the only locality in the vicinity of Tepic in which I found this oriole. I saw them feeding upon the ripe coffee berries, and probing the ripest oranges with their sharp bills and sucking the juice. There

were only a few of them, and I believe they seldom left the garden. Subsequently I procured specimens in a garden near Guadalajara, and saw some in cages in the City of Mexico. I have never met with it in the forest of the Western Coast region, and consider it comparatively rather a rare species in Western Mexico."

90. *Icterus pustulatus* (Wagl.).

Tepic, Grayson ; Mazatlan, Xantus, Bischoff ; Plains of Colima, Manzanilla Bay, Xantus.

"Of the numerous species of orioles inhabiting the Tropics, this one is the most familiar about the locality of Mazatlan, and indeed all of Western Mexico. I found it as far south as Tehuantepec, Guadalajara, Tepic, and other places, where I always met with it as a well-known and common species. Its long pensile nest, its sprightly little song, and more especially the gay plumage of a fully adult male, renders it a conspicuous bird among the feathered songsters of its native woods.

"The nests are generally suspended from a tough, slender branch or recumbent twig of the acacia tree, protected from the intense rays of the sun by the beautiful canopy of its fringed foliated branches. Such a tree as the tamarind acacia is often selected, and one or two nests are sometimes seen swaying in the breeze, beneath the generous shade of this perennial beauty of the forest. The nest is composed of the thread-like or elastic fibres of the maguey plant. I have seen some in which cotton thread and twine were component parts of its elastic and firm structure. The nests are of various lengths, conformable to the materials at hand for the intricate formation of the warp necessary for the weaving of this unique and airy abode, in which to rear their little family. The inside bottom is lined with the downy substance of the tree cotton, intermixed with a few feathers. In one nest I found an entire skein of yellow silk, which it had doubtless picked up where some village brunette had dropped it.

"The eggs are generally five in number, rather long, of a pale blue ground, with numerous hieroglyphic scratches confluent around the larger end."

91. *Icterus graysoni* Cass.

" " Proc. Bost. Soc. of N. H., xiv, p. 280.

" " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 336.

Tres Marias Islands, Grayson.

"This fine species I found to be quite abundant upon the Three Marias, where it appears to be local and peculiar."

92. *Molothrus pecoris* var. *obscurus* (Gm.).

Mazatlan, Grayson ; Manzanilla Bay, Xantus.

"The remarkable and apparently unnatural habits of this species, in preparing no nest in which to rear their young, but selecting those of other birds, distributing an egg in each, leaving it to be hatched and the nestling to be reared by foster parents, is well known to ornithologists, as well as to the scrutinizing observer of nature, whose wonders are revealed to him in many strange forms.

"The birds whose nests are selected in which to deposit its egg are usually smaller than itself. In the vicinity of Mazatlan, the beautiful and basket-shaped nest of *Vireosylvia flavoviridis* seems to be the one preferred. This Vireo is a summer visitant from the regions of Central America; soon after their arrival they commence their nidification, which is in May and the early part of June. The nest is generally placed pendant between two branches, usually low down. I have found this species quite abundant on a small, thickly wooded peninsula near the sea-shore, but a short distance from the city of Mazatlan. Here I have seen the female Cow-bird stealthily seeking an opportunity to drop its egg in the nest of the Vireo. She at length finds this opportunity in the absence of the true owners of the nest, but not before one egg at least has been laid does she deposit hers by its side, otherwise the Vireo would abandon it. The intruder's egg is first hatched, and the others a little after. The larger size and greater strength of the foundling absorbs all the attention of the poor dupe of a dame, and she proves a very affectionate and assiduous nurse to the uncouth stranger.

"The Cow-bird is very numerous in the region of Mazatlan and Tepic, and in fact pretty generally distributed over Mexico. About Mazatlan they are seen in large flocks, often in company with the larger species of this genus, *M. æneus*."

93. *Molothrus æneus* (Wagl.).

Mazatlan, Grayson ; Manzanilla Bay, Mts. of Colima, Xantus.

"We now come to a larger species of *Molothrus* or Cow-bird, whose habits, though less known than the preceding smaller species, are, however, very similar so far as my own observation is concerned. That this species also deposits its eggs in the nests of other birds, I have not the least doubt ; indeed, I am fully convinced from the facts which have presented themselves to me when I have been assiduously watching their movements during the breeding season.

"On the 19th of May, 1868, whilst hunting in the woods near Mazatlan, I discovered a nest of the Bull-head Fly-catcher (*Pitangus derbianus*), which is a common species in this region, and builds a large nest, dome-shaped, the entrance being on the side. Whilst I was quietly looking at the nest (which was about forty feet from the ground), I observed a female Red-eyed Cow-bird among the branches of the same tree looking very melancholy. Suddenly she darted towards the nest, upon the side of which she perched, and immediately attempted to enter, but the vigilance of the fly-catcher was too acute, and observing the intrusion upon her sacred domicile, quickly attacked the Cow-bird and drove her instantly away. I soon after saw the same bird examining the nest of the Mazatlan Oriole (*Icterus pustulatus*), but as there had been no egg yet laid in the nest, it did not seem to suit her, and she soon disappeared in the intricacies of the forests, leaving me strongly impressed as to her intentions.

"The exceedingly thorny nature of the woods in this country renders the close observation of the nests of birds very difficult, almost impracticable.

"The Red-eyed Cow-bird is a very common species in North-western Mexico ; it may be seen frequenting the villages and towns in flocks, associating with the Grackles and smaller Cow-birds. They are generally distributed throughout Mexico. I shot a young male in San Blas which had attracted my attention by its having what I supposed a snow-white crest, but on being examined it proved to be a piece of white cloth stitched in the scalp, and trimmed to represent the comb of a cock ; it had doubtless been done when the bird was very young by some of the natives, as the wounds of the operation were entirely healed."

94. *Agelaius phæniceus* (Linn.).

Mazatlan, Grayson.

95. *Agelaius gubernator* (Wagl.).

Mazatlan, Tepic, Grayson.

"Abundant in the vicinity of Tepic, inhabiting the fresh water marshes, also in similar localities near Mazatlan ; resident."

96. *Xanthocephalus icterocephalus* (Bp.).

Mazatlan, Grayson.

97. *Sturnella magna* var. *neglecta* (Aud.).

Mazatlan, Grayson.

"A constant resident from Mazatlan to the high central plains near Guadalajara."

98. *Scolecophagus cyanocephalus* (Wagl.).

Mazatlan, Grayson.

99. *Quiscalus major* Vieill.

Manzanilla Bay, Plains of Colima, Xantus.

100. *Quiscalus major* var. *macrourus* Sw.

Guadalajara, Grayson.

"I procured specimens of this large species only in the vicinity of Guadalajara, and I thought I saw it in San Blas on the sea coast. I have not met with it in the locality of Mazatlan."

101. *Quiscalus major* var. *palustris* (Sw.).

Mazatlan, Grayson.

"I was not aware until I saw Mr. Cassin's description (Proc. Acad. Nat. Sci., Phil., 1866, p. 411) that two species existed in the Mazatlan region. I always supposed those with brownish thighs (*Q. palustris*) to be young birds in immature plumage. I have examined a good many, and all with brown thighs appeared to me to be young birds of the year, and the adult birds answering to the description of *Q. tenuirostris*, having the thighs blue-black like the rest of the under parts, without a shade of brown. Mr. Cassin, however, is doubtless correct, and Mr. Swainson's discovery of the same bird in the valley of Mexico, and describing it as a distinct species, is a strong support to Mr. Cassin's conclusion. I shall endeavor, however, to throw as much light as possible upon the subject, by a more careful observation in future, in order that the facts may be entirely set at rest in my mind.

"It is a 'close shave' in determining some of these nearly allied species. *Q. major* and our present bird, *Q. palustris*, are very much alike, as well as *Q. tenuirostris*, all inhabiting the lower countries. A still larger Boat-tailed Grackle (*Q. macrourus* Sw.) is quite common near Guadalajara, living most of the time in the irrigated gardens and orchards, where I found them breeding among the orange trees.

"*Q. palustris* is very common in the coast region of Mazatlan, where it is seen in flocks frequenting the marshes on the Esteros, in search of small crabs and water insects. Many of them, however, take up their abode in the towns and villages, and become very docile; they are there attracted by the grains of waste maize, and the refuse crumbs and meats thrown from the dwellings. In the town of San Blas they are so numerous and domestic as to be a nuisance, often entering the houses and carrying off whatever kind of provision they can find, meat as well as grain. At the hotel where I was stopping in that town, it was necessary to keep a servant watching the table, whilst the meals were being prepared, to keep them from demolishing the tortillas and beans. In the city of Mazatlan, about twenty congregate in front of my window to receive their daily bread, a few crumbs of which I throw to them every morning.

"They always build their nests in communities, selecting a grove of ordinary sized trees, usually near some fresh water lagoon, and sometimes in the trees that ornament the dwellings of the natives. The nests are placed in the topmost branches, and are composed of coarse grass and roots externally, and plastered inside with cow-dung or mud. The eggs are usually five, of a pale blue color, with numerous zigzag marks of black."

Probably Col. Grayson's first conclusion was right in considering the birds found at Mazatlan with blue thighs and with brown ones, as different ages of the same species, viz., *Q. palustris*. Unfortunately the promised further investigation was prevented by his premature death. It is therefore desirable that specimens of the *Quiscalus* with blue-black thighs, from the vicinity of Mazatlan, should be examined, that its true position may be ascertained; three male specimens of *Q. palustris* in the collection have their thighs dark brown.

Col. Grayson erroneously quotes Mr. Cassin as stating that *Q. tenuirostris* has the thighs blue-black, and as being found at Mazatlan. Mr. Cassin gives no special locality, only "from Mexico," and does not give the color of the tibia. However, Swainson says, "inhabits the marshes adjoining Mexico." And on an examination of *Q. tenuirostris* in the Philadelphia Academy, I found the thighs to be of an ochreous brown, much lighter than those of *Q. palustris*, which are of a very dark brown; its occurrence at Mazatlan, perhaps, may be considered to be doubtful.

The brown thighs, therefore, will not answer as a distinguishing character for *Q. palustris*, the fact of *Q. tenuirostris* also having them brown, seems to have escaped the observation of Mr. Cassin.

Mr. Cassin has strangely erred in giving the feet of *Q. tenuirostris* as black, instead of which the tarsi and toes are of a clear brownish-red, and the claws brown; the tarsi, toes and claws of *Q. palustris* are black, but these Mr. Cassin has not noticed.

I have no doubt that the two species are rightly determined by Mr. Cassin, for in general coloration and in form they are as described by Mr. Swainson and by himself. The bill of *Q. palustris* is shorter, and very much wider at the base than in *Q. tenuirostris*, the latter species is somewhat larger in all its measurements.

Fam. CORVIDÆ.

102. *Corvus corax* var. *carnivorus* Bartram.

Mazatlan, Grayson.

"Not common, but occasionally met with at any season."

103. *Corvus mexicanus* Schl.

Mazatlan, Grayson, Xantus.

"So far as I am acquainted with this species it appears to be confined in its geographical distribution to the northwestern parts of Mexico, bordering the sea coast. In Tehuantepec I did not see it, nor have I met with it anywhere in the interior far from the sea. It is quite common at San Blas and Santiago River, and I am inclined to believe that its geographical range rests principally within the limits of these regions.

"It breeds in San Blas, forming its nest in the tall cocoanut palms that grow in the town, and I also found some breeding similarly in the suburbs of Mazatlan; but it is more numerous on the Mazatlan River; there I discovered its nest in the thorny mimosa trees. The nest is composed of small sticks and grass, much like that of the common crow; the eggs too are much like those of that species, but smaller.

"This is the smallest crow yet discovered upon our Continent, and is decidedly the handsomest. It is impossible to convey to the reader, either by pen or pencil, the glossy satin-like appearance of its plumage; in some lights exhibiting the most delicate and beautiful shades of purple, violet and bronzy reflections, so smooth, compact and soft is it, that the light trembles and scintillates from its surface as from polished steel. Its form is compact, and its general appearance much like the common crow, as well as its habits, though the present species is a little more arboreal, feeding upon the various kinds of fruit which it finds in the trees of the tropical forests. Like the common crow, however, it often descends to the ground in search of insects and their larva, which it hunts for by turning up bits of wood, and in the newly ploughed fields; but it may be more frequently seen upon the seashore at low tide, near the mouth of the Esteros, searching for the small crabs, snails and other shell-fish that abound in such localities.

"In the fall and winter months they congregate in large flocks, visiting the fields of Indian corn first ripened, in which they do considerable damage; but unlike the American crow, he is not persecuted to death for this bit of roguery. The natives seldom molest them. They sometimes visit the sand bars of the river in large flocks, for the purpose of bathing. The voice of this crow is something like that of the common species, but less harsh, indeed some of its notes are quite musical."

104. *Cyanocitta beecheyi* (Vig.).

Cyanocorax beecheyi Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 333.

Mazatlan, Grayson, Bischoff; Tres Marias, Xantus.

"This, I believe, is the largest of the true jays, nearly as large as the small crow found in the same locality, and which the male very much resembles about the head. The colors are very rich and decided, all the under parts, head and neck, of a jetty-black, the back, wings and tail being of a beautiful blue, with a purplish wash; the bill of the female is yellow, that of the male black; the feet of both being yellow, armed with sharp strong claws, nearly as powerful in their grip as those of some small hawks; no difference in the colors of the male and female, except in the bill and eyes.

"There is nothing it will not pilfer and carry off, if able to do so, when it visits the huts and ranchos of the natives, and hen's eggs he is particularly fond of; he never fails to rob every bird's nest of its eggs, provided the parents are not successful in driving him off, but in these thieving exploits he is very shy and quiet, generally succeeding in evading the weaker parent birds, who do all in their power to drive the heartless invader away from their dear treasures.

"The geographical distribution of this jay is less extensive than the Urraca (*C. collieri*); I did not meet with it in Tehuantepec, and I think it more abundant in Sinaloa, or Northwestern Mexico than it is farther south. I have generally met with it among the low scrubby forests of the poorer lands of Sinaloa, to which it seems to be more partial than the rank woods in some parts of the country. Its food consists of grubs, beetles, and various kinds of insects; also many kinds of fruit; it is also very fond of meat; corn when to be had he is very partial to, and holding the grain between his claws, he divides it with great dexterity by hammering it with his strong bill. Iris of the male yellow, that of the female gray."

In Xantus' collection I find specimens of this species obtained on the Tres Marias Islands, which I was not aware of when I gave a list of the birds found there.

105. *Cissolopha sanblasianus* (Lafr.).

Plains of Colima, Manzanilla Bay, Los Trochas, Xantus.

106. *Calocitta collieri* (Vig.).

" " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 334.

" *elegans* " " " " " p. 335.

Mazatlan, Grayson, Xantus, Bischoff.

"All the Jay family are more or less addicted to mimicry, gesticulation, and a great propensity to thieving, robbing every bird's nest of its eggs, or even its young, if not driven off by the owner. The Urraca is an adept in all these accomplishments, if not superior to his congeners in cunning and intelligence.

"After the month of September the Urracas in families of seven or eight will almost invariably be found in company with the small flocks of Double-crested Orioles (*Cassiculus melanicterus*), with whom they continue all the winter until the breeding season arrives. They follow the orioles through all their perigrations in the woods, in order to share a part of the various beetles, grasshoppers and other insects, and their larvæ which the more active orioles are better fitted to uncover from their hiding places in the bark and leaves of trees. They thus pass the time hunting amicably together, the orioles seeming to be satisfied with their society, and at the same time the ever vigilant Urracas, being on the alert, give timely warning of danger.

"The Urraca Jay builds its nest in May; it is composed of rough thorny sticks, and lined with moss or fibres of roots and grass; it is about as large as that of a magpie, and like that bird, a great deal of caution is observed in locating it in some inaccessible thorny tree.

"Of the numerous species of jays, the Urraca excels all in size and showy appearance, his elegant form, his splendid plumage of glossy blue upon the upper parts, whilst his under dress is a pure white; his very long and graduated tail, the two central feathers of which in some individuals measure two feet; the ample recurved crest of black feathers tipped with blue, surmounting a well-shaped head, the jetty plumage of his neck and throat, forming a crescent upon his white breast, like an escutcheon — all of which gives to our hero a truly regal and princely air, beautifully harmonizing with the tropical forest in which he lives.

"It is a habitant of Western Mexico, generally met with in the thick and voluptuous forest of the *tierra caliente*, near the Pacific coast. It is seldom seen to the eastward of the summit of the Cordilleras. Its geographical range being from Sinaloa, Mexico, to Central America; in all this region it is common, though an interesting bird to the traveller or native, and generally elicits a full share of admiration as he appears conspicuous among the numerous gaudy tenants of his native woods. Often have I paused upon the road to watch his eccentricities, his dodges, his taunts and jeers, of which he is unsparing to the stranger. They will then follow the traveller for half a mile or more, until their curiosity seems to be satisfied, when suddenly, with the greatest seeming contempt, they will fly off with their wings and tail spread to their fullest extent, uttering a loud squally note, seeming to say — Adios Gringo!

"The adult has the crest of the head black, the feathers forming it often tipped with blue, and sometimes entirely black. A young male now before me has all the feathers forming the crest distinctly tipped with white. In the young or immature birds the black of the chin and throat is replaced by a dirty white, with a mixture of black, edged with a black crescent-shaped band dividing it from the pure white of the rest of the under parts.

"There is no perceptible difference in the sexes."

In the different collections there are seventeen specimens, all purporting to be this species; nine of them are fully adult; in these the long central crest feathers are black, with their ends just tinged with blue; six of the others have the crest feathers ending with white; one of these specimens is younger, it has the chin black, the throat bluish-white, surrounded with black; this seems to be the stage of plumage on which Dr. Finsch, *l. c.*, founded his new species, *C. elegans*. The other two are nearly adult, and in fine plumage, the ends of the crest feathers blue, just tipped with bluish-white. It appears therefore that the long crest feathers are tipped with white in the younger birds, and that this color is gradually replaced by blue in the adult. The markings, also, on the ends of the shorter crest feathers differ in the various specimens, showing a transition from white to blue. There appears to be some irregularity in acquiring the fully mature plumage; in some the throat is entirely black, while the crest feathers are still tipped with white; in others the white has entirely disappeared from the crest feathers, and the throat feathers have their ends bluish-white, retaining on that part the plumage of the immature bird.

Mr. Salvin suggests that the difference of plumage between *C. colliei* and the *C. elegans* of Dr. Finsch, may be sexual. But, as stated by Col. Grayson, the sexes do not differ in plumage; this is also shown by the examples, there being old and young of both sexes in which the plumage is the same.

I much fear that the species of my friend Dr. Finsch cannot be sustained, and had he the same evidence before him that I have, he would doubtless come to the same conclusion.

107. *Calocitta formosa* (Sw.).
Manzanilla Bay, Rio de la America, Xantus.

108. *Xanthoura luxuosa* (Less.).
Sierra Madre, Xantus.

Fam. DENDROCOLAPTIDÆ.

109. *Dendrornis mentalis* Baird.
“ “ Ann. Lyc., N. Y., VIII., p. 481.
Mazatlan, Grayson, Xantus, Bischoff; Tepic, Xantus.

Fam. TYRANNIDÆ.

110. *Attila cinnamomeus* Lawr.
“ “ Ann. Lyc., N. Y., x., p. 8.
Mazatlan, Grayson.

“Not a common species, found in this locality the entire year, inhabits the thick woods; I also found it in the State of Jalisco, near Tepic. It feeds upon the various kinds of wasps and bees; the stout and numerous rictal bristles are well arranged to protect it from their sting. The singular form of the bill is a distinguishing feature in this species; it has the appearance of being slightly curved upwards to near the tip, which is bent downwards in a very acute point, the culmen very prominent, the under mandible curved upwards, commissure nearly straight, bill notched at point.”

111. *Sayornis nigricans* (Sw.).
Mazatlan, Grayson.

112. *Camptostoma imberbe* Scl.

Mazatlan, San Blas, Grayson.

"Shot near San Blas, in the latter part of June; found in the vicinity of Mazatlan. Not common, but appears to be resident."

113. *Elainea placens* Scl.

" " Proc. Bost. Soc. of N. H., XIV, p. 279.

Tres Marias Islands, Grayson.

"Resident in all localities of the Tres Marias Islands."

114. *Myiozetetes texensis* (Giraud).

Mazatlan, Grayson, Xantus; Tepic, Grayson; Plains of Colima, Tonila, Xantus.

"Like the Bull-headed Flycatcher (*Pitangus derbianus*), this also builds a dome-shaped nest, and very large for the size of the bird. The nest is composed of materials similar to the larger kind. It is a little singular that of the numerous flycatchers, these are the only known species that construct their nests in this peculiar form.

"The Red-crowned Flycatcher is not an uncommon species in the region of Mazatlan, where it may be met with in the sparsely wooded districts, in which there are scattering large trees and stunted thorny underwood, near some fresh water stream or lagoon.

"The notes are shrill and clear, with but little variation, and when uttering them it has a peculiar manner of stretching its neck and casting its head from side to side, whilst its tail is in active motion. The males have frequent combats during the love or breeding season, and they sometimes fall to the ground clinched together in these furious paroxysms of rage; jealousy seems to be the prime cause of these assault and battery cases, and the victor is rewarded by winning the object of contention. Although it builds its nest in the same tree with other birds, yet it will not be on such intimate terms with its own species. It sits upon its perch waiting for the passing winged insects of its choice, which it pursues with a rapid flight, the wings making a rustling noise, when in the act of darting on its prey."

115. *Pitangus derbianus* (Kaup.).*Saurophagus derbianus* Finsch, Abh. nat. Ver. zu. Bremen, 1870, p. 329.

Mazatlan, Grayson, Bischoff; Plains of Colima, Xantus.

"This is a common and abundant species, inhabiting the western and northwestern parts of Mexico. I found it equally as common in Tehuantepec as in the region of Mazatlan, where its loud shrill notes of hip-se-dee, hip-se-dee, may be heard at all seasons of the year, but more particularly during the breeding season, when it is excessively garrulous. It is more frequently met with in the neighborhood of fresh water streams and lagoons, and I have often observed them dart into the water after water insects and minnows that were swimming near the surface, not unlike the kingfisher; but they usually pursue and capture on the wing the larger kinds of Coleoptera and Neuroptera, swallowing its prey entire after first beating it a few times against its perch. They are usually in pairs, but I have also seen as many as twenty about a stagnant pool, watching its turbid water for insects and small fish, for which they seem to have a great partiality.

"The nest of this species is very large, and its construction differs from all the Tyrannidæ of which I have any knowledge, except *M. texensis*. It is dome-shaped or covered, with the entrance on the side, whilst the other species build a nest saucer-shaped. The nest of the Bull-headed Flycatcher is usually placed in the forks of the branches of very thorny trees, twenty-five or thirty feet from the ground; it is composed of very coarse material of either straw or lichens, sometimes of both; the lining, however, is of firmer and more elastic fibres. Other birds sometimes make their nests in the same or nearest tree; such as *M. texensis*, *C. melanicterus* and *I. pustulatus*.

"The eggs of this flycatcher are usually five in number; they are of moderate size, rather lengthened, of a light cream color, with a small reddish speck; the shell is delicate and easily broken."

116. *Myiodynastes luteiventris* Bp.

Mazatlan, Grayson, Xantus; Mts. of Colima, Xantus.

"Not a common species; inhabits the tall trees of the woods. I have only met with it in the months of May and June, at which time they were nesting. I have also found it near Tepic, in the State of Jalisco, in the month of May. As I have not met with a single bird of this species during the winter months, I am led to the conclusion that they migrate southward after the breeding season is over."

117. *Pyrocephalus rubineus* var. *mexicanus* Scl.

" *mexicanus* Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 330.

Mazatlan, Grayson; Plains of Colima, Xantus.

"Abounds in Western Mexico, throughout a greater portion of which it is a constant resident. I found it along the entire route from Tepic to the City of Mexico. Its favorite resort is along the borders of small streams or stagnant pools, where it perches upon some low dry branch, from whence it darts upon the skimming water flies and Hymenopterous insects that resort to such localities. It seldom perches upon a high tree, and is never met with in the thick forests. They are very abundant in the vicinity of Tepic, where I found several of their nests in May and June. The nests were always over the water of a lagoon, or the river of Tepic, generally in the fork of a small thorny bush without leaves, and densely covered with gray lichens or moss; so nearly does it resemble the lichens among which it is placed as to render its detection difficult, were it not for the birds themselves, who exhibit great uneasiness when their nest is approached. The eggs are five in number, very delicate, of a cream color, with purplish-brown spots."

118. *Mitrephorus phæocercus* Scl.

Mazatlan, Grayson, Bischoff.

119. *Empidonax flaviventris* var. *difficilis* Baird.

" *difficilis* Proc. Bost. Soc. of N. H., XIV., p. 279.

Mazatlan, Tres Marias, Grayson; Plains of Colima, Xantus.

"Found in the vicinity of Mazatlan, quite common; also at Tepic and the Tres Marias Islands. All the specimens procured by me were in the winter and spring months. I am not certain that it remains throughout the summer."

120. *Empidonax traillii* var. *pusillus* (Sw. and Rich.).

Mazatlan, Grayson.

121. *Contopus virens* var. *richardsoni* (Sw.).

Mazatlan, Grayson.

122. *Contopus pertinax* Cab. et Hein.

Tepic, Mazatlan River, Grayson; Plains of Colima, Xantus.

"This flycatcher is found here at all seasons, and at Tepic."

123. *Myiarchus mexicanus* (Kaup.), (*cooperi* Baird).

" " Proc. Bost. Soc. of N. H., XIV., p. 278.

Mazatlan, Tres Marias, Grayson.

"This large flycatcher I found in the vicinity of Guadalajara, Tepic, and quite common in the *tierra caliente*; also a few specimens procured in the Tres Marias Islands.

"I discovered the nest in a hollow stump about five feet from the ground; the hole was vertical, and at

the bottom, about a foot from the top, was the nest, composed of hair, wool, and the castings of a snake; the hole was just large enough to admit my hand to extract the eggs, five in number, which are of a cream color, with numerous reddish-brown splashes."

124. *Myiarchus lawrencii* (Giraud).

" " Proc. Bost. Soc. of N. H., xiv., p. 279.

Mazatlan, Tres Marias, Grayson; Plains of Colima, Xantus.

"Common and resident in the Marias; found also on the main-land in this locality, but not so numerous."

125. *Myiarchus cinerascens* Lawr.

Mazatlan, Grayson.

"Inhabits the woodland districts; common all the year."

126. *Tyrannus melancholicus* var. *satrapa* Cab. et Heine.

Mazatlan, Grayson; Plains of Colima, Xantus.

"This is one of the most common flycatchers in Northwestern Mexico, and is pretty well distributed throughout all of the interior. They inhabit the open country usually in pairs, and are constant residents of the locality to which they have become attached, seldom migrating to any great distance. They are very pugnacious during the breeding season, attacking and pursuing every bird, particularly the crows and hawks that come in the neighborhood of their nests. It performs some beautiful evolutions in the air when in pursuit of the various winged insects upon which it preys."

127. *Tyrannus melancholicus* var. *couchii* Baird.

Mazatlan, Grayson.

128. *Tyrannus vociferans* Sw.

Plains of Colima, Xantus.

129. *Tyrannus verticalis* Say.

Tepic, Grayson; Plains of Colima, Xantus.

130. *Tyrannus crassirostris* Sw.

Megarhynchus crassirostris Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 329.

Rio Mazatlan, Grayson.

"This large and handsome flycatcher is a habitant of Western Mexico, and perhaps its geographical range extends further south. Unlike most of the flycatchers, it invariably perches upon the topmost branches of the tallest trees, always preferring a withered branch or leafless tree, where its vision is unobstructed whilst calmly waiting for its prey to pass, which consists of the larger beetles, and other winged insects. When one of them passes within range of its keen vision, it immediately gives pursuit, and if successful in capturing it will return to its perch, and after beating its prize on the branch until dead, or stunned, swallows it entire. When sitting upon its lofty perch quietly surveying the scene around, it has a proud and kingly appearance, seeming to disdain to turn his head toward the lower brushwood, where his smaller congeners are pursuing their more humble avocation in darting at, and snapping up, the smaller winged insects. They are generally found in pairs, and build their nests upon a horizontal branch of very large and tall trees, where they are inaccessible to the naturalist. During the breeding season they are very tyrannical, attacking with ferocity every bird, hawk, crow or vulture, that should happen to approach too near their domicile."

Fam. COTINGIDÆ.

131. *Tityra personata* Jard. and Selb.

Mazatlan, Grayson, Bischoff; Sierra Madre, Xantus.

"Generally seen in very lofty trees, either in small flocks, but more usually solitary, or in pairs. It feeds on various kinds of fruit, as also insects which I have seen it dart after, like the flycatchers. I have found it in this locality in the months of November, February, April and June. It doubtless breeds in the mountainous regions of this latitude. It has no song, the voice being rather harsh."

132. *Hadrostomus aglaia* var. *affinis* Elliot.

" " " Proc. Bost. Soc. of N. H., xiv., p. 279.

Tres Marias, Grayson.

"Not numerous upon the islands, usually met with in the thick woods. Not found upon the main-land in the locality of Mazatlan."

133. *Hadrostomus albiventris* Lawr.

" " Ann. Lyc., N. Y., viii., p. 475.

Mazatlan, Grayson, Bischoff; Plains of Colima, Xantus.

"I have only seen one bird of this species, a male shot in February."

Fam. MOMOTIDÆ.

134. *Momotus mexicanus* Sw.

Mazatlan, Grayson, Xantus, Bischoff; Plains of Colima, Xantus.

"This curious bird inhabits the darkest woods of the *tierra caliente*. It breeds in the ground like the kingfishers; the eggs are three to four, clear white, and elliptical in shape. A constant resident in this locality, and quite common in Tehuantepec. It subsists chiefly upon insects."

Fam. ALCEDINIDÆ.

135. *Ceryle alcyon* (Linn.).

" " Proc. Bost. Soc. of N. H., xiv., p. 284.

Mazatlan, Tres Marias, Grayson.

"Common at all seasons."

136. *Ceryle torquata* (Linn.).

Mazatlan, Grayson.

"This species preëminently exceeds all others of its genus in size; one bird at a little distance off, when seen in its usual haunts, would be apt to be taken for the common Belted Kingfisher, its habits and general appearance being similar; but upon a near investigation we find a bird of much larger size, the colors and markings of some parts of its plumage different, its notes, too, are less clamorous and more feeble.

"I have seen the largest kingfisher only near the sea coast, in the vicinity of Mazatlan River, but not on that stream. They seem to prefer the stagnant pools and lagoons, whose waters are murky and densely shaded with overhanging trees; here upon some dried branch it sits quietly watching the opaque water for whatever finny creature may make its appearance upon the surface, when if not too large, it instantly darts or plunges headlong upon it; after securing the prey in its powerful bill, it bears it to the perch, and beating it a few times upon the perch swallows it entire. Small fishes constitute almost its principal food, but frogs and small water reptiles are often struck and devoured by it. This species does not seem to be so wary as its near congener, the Belted. I have approached it quite near, in order to observe its habits, and it appeared to be

very little concerned at my presence. In examining the stomach of one shot by me, I found it crammed with the small fry peculiar to muddy pools, among which was a mud catfish of considerable size. It doubtless breeds in holes scratched in sand cliffs, like the other members of this family, but I have never encountered the nest."

137. *Ceryle amazona* (Lath.).

" " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 328.

Mazatlan, Grayson ; Tupila River, Xantus.

"This handsome species is not common, but I have found it about the Rio Mazatlan at nearly all seasons. It appears to be a constant resident."

138. *Ceryle americana* var. *cabinisi* (Tsch.).

Mazatlan, Grayson, Xantus ; Tepic, Grayson ; Plains of Colima, Tupila River, Xantus.

"This handsome little species usually inhabits the small fresh water streams, especially those of the mountains, and sometimes the estuaries on the sea coast. In the region of Tepic it is quite common, and I saw it in several localities from that point on the road to Guadalajara. It is a constant resident."

Fam. TROGONIDÆ.

139. *Trogon ambiguus* Gould.

" " Proc. Bost. Soc. of N. H., xiv., p. 272.

" " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 326.

Mazatlan, Tres Marias, Grayson.

"This richly plumaged bird is a habitant of the warmer regions of Mexico, from Sinaloa to Central America, on the west side. It is to be met with only in the dark forests of the *tierra caliente*. It breeds in the hollows of trees like the parrots ; incubates in June and July."

This species has been in some cases mistaken for *T. mexicanus* ; although much alike in general coloring, they may be readily separated by the colors and distinctive markings of the tail.

T. ambiguus has the central tail feathers coppery-red, with a rather broad terminal black bar ; the outer feathers are brownish-black at their bases, with their ends white, the intermediate portion of these feathers is white, marked on both webs with very narrow irregular freckled lines of black, or as expressed by Prince Bonaparte, "*nigro vermiculatis*."

In *T. mexicanus* the central tail feathers are bluish-green, ending narrowly with black ; the lateral feathers are black ending with white, but the white color of the ends not evenly defined, as in *T. ambiguus* ; the outer webs are very regularly barred with white, and the margin of the inner webs marked with white indentations.

T. mexicanus is probably peculiar to Eastern Mexico ; my specimen came from Jalapa. It is accurately figured by Swainson (Zool. Ills., 2d series, pl. 82).

140. *Trogon citreolus* Gould.

" " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 327.

Mazatlan, Grayson.

"Well distributed throughout the forests of the *tierra caliente* of this region. I found it also in Tehuantepec. Native, and does not migrate."

This has been confounded with *T. melanocephalus* from Eastern Mexico and Honduras, but they may easily be distinguished from each other by the extent of white in the lateral tail feathers; in *T. melanocephalus*, the white occupies about an inch of the end of each of the outer three feathers, and is evenly separated from the black of the rest of the feather; whereas the exposed portion of the outer lateral feather in *T. citreolus* is entirely white, the next nearly so, and the third feather irregularly white at the end. Numerous specimens are in Prof. Sumichrast's collection from Tehuantepec.

Fam. CAPRIMULGIDÆ.

141. *Chordeiles texensis* Lawr.

Mazatlan, Grayson.

"This I have found to be a common species in Western Mexico, particularly in the vicinity of San Blas and Mazatlan. I also found it in Tehuantepec. Like all the birds of this genus, it rests quietly during the day upon the ground, or some old moss-covered log, darkly shaded, and in the most gloomy and secluded parts of the forest. They will suffer themselves to be almost trodden upon at times before taking wing, and were they to remain quiet they could scarcely be perceived, so nearly are they of the color of the withered leaves or the mossy log on which they rest.

"Its flight is easy and graceful, at times skimming low to the earth, and at others soaring to a great height whilst in pursuit of nocturnal insects, upon which it chiefly subsists; they usually make their appearance a little after sunset in considerable numbers.

"The egg is deposited on the withered leaves without the least appearance of a nest, in some retired spot in the woods; there are sometimes two eggs, but usually one, of a cream color."

142. *Nyctidromus albicollis* (Gm.).

" " Proc. Bost. Soc. of N. H., xiv., p. 273.

Mazatlan, Plains of Colima, Xantus; Tres Marias, Grayson.

Fam. CYPSELIDÆ.

There are no specimens of this Family in any of the collections from Western Mexico, but on Col. Grayson's list there are the English names of three species, viz. —

Chimney Swift, Black Swift, Largest Swift.

In the absence of specimens these cannot be identified.

Fam. TROCHILIDÆ.

143. *Thalurania luciae* Lawr.

" " Proc. Bost. Soc. of N. H., xiv., p. 284.

Tres Marias Islands, Grayson.

144. *Florisuga mellivora* (Linn.).

" " Proc. Bost. Soc. of N. H., xiv., p. 284.

Tres Marias, Xantus.

145. *Calothorax lucifer* (Sw.).

Trochilus " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 329.

Sierra Madre, Grayson; ex Finsch.

Dr. Finsch has this species in his list of some birds obtained from Col. Grayson's collec-

tion. There are no specimens in any of the collections from Western Mexico received by the Smithsonian, nor do I notice any humming bird referred to by Col. Grayson that can be this species.

146. *Petasophora thalassina* (Sw.).

“ “ Proc. Bost. Soc. of N. H., xiv., p. 284.

Tres Marias, Xantus.

147. *Heliomaster leocadiæ* (Bourc.).

Mazatlan, Grayson.

148. *Cyanomia quadricolor* (Vieill.).

Mazatlan, Guadalajara, Grayson.

“Summer visitant; very rare; shot in July.”

149. *Cyanomia guatemalensis* Gould.

“ “ Proc. Bost. Soc. of N. H., xiv., p. 284.

Tres Marias, Xantus.

150. *Pyrrhophæna graysoni* Lawr.

“ “ Proc. Bost. Soc. of N. H., xiv., p. 283.

Tres Marias, Grayson.

“This large and handsome species is abundant and peculiar to the Islands of the Tres Marias.”

151. *Pyrrhophæna cinnamomea* (Less.).

Mazatlan, Grayson.

“A common species in the entire Pacific slope of Mexico; it is a constant resident. This resembles the Tres Marias Islands species (*P. graysoni*), but is much smaller, and is not found upon the Marias.

“The nest of this species is beautifully formed like a small cup, attached to a very slender branch or twig; the materials of which it is composed are the down of plants, woven and cemented together with the silken threads of caterpillars' or spiders' webs, and the whole of the outside covered with the most delicate lichens. I procured the nest in August; it contained three eggs.”

152. *Circe latirostris* (Sw.).

“ “ Proc. Bost. Soc. of N. H., xiv., p. 282.

Mazatlan, Tres Marias, Grayson.

“This species is common in the *tierra caliente* to Tehuantepec, and abundant in the Tres Marias Islands.”

153. *Chlorostilbon insularis* Lawr.

“ “ Proc. Bost. Soc. of N. H., xiv., p. 284.

Tres Marias, Grayson.

Fam. CUCULIDÆ.

154. *Crotophaga sulcirostris* (Sw.).

Mazatlan, Grayson, Xantus, Bischoff; Tepic, Grayson; Plains of Colima, Xantus.

“This is a common species in this locality, and throughout western *tierra caliente*. They associate in small flocks of eight or ten, and are fond of picking the ticks off the cattle. It does not migrate. The nest is

usually built in a thorny tree or bush, at a moderate height, and composed of thorns and dried twigs exteriorly, and lined with fibrous roots; the eggs are usually five, the outside of the shell is rough and white, the inside is green."

155. *Piaya ridibundus* (Gm.), (*mexicanus* Sw.).

Pyrrhococcyx mexicanus Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 356.

Mazatlan, Grayson, Xantus, Bischoff; Tupila River, Plains of Colima, Xantus.

156. *Morococcyx eythropygia* (Less.).

Mazatlan, Grayson.

157. *Coccyzus americanus* (Linn.).

Mazatlan, Grayson.

"A summer visitant; makes its appearance in June, and disappears about the middle of September. Usually inhabits the mangrove swamps in this locality, where it breeds."

158. *Geococcyx mexicanus* (Gm.).

Mazatlan, Grayson, Xantus.

"This remarkable bird, which the Mexicans call 'Churea, or Correa del Camino' (Road-runner), so called from the habit it sometimes has of running along a path or road—seldom fails to attract the attention of the traveller by its solitary and peculiar habits, and often, too, in the mountainous regions and desert countries, where no other living creature is to be seen. Although met with in such localities, it is, however, not entirely confined to them, as it is an equal habitant of some portions of the thinly wooded parts of the *tierra caliente* of the West, where the trees are scrubby and the country open, as the barren and rocky great central plains of Mexico. It seems to prefer a hilly country but scantily supplied with vegetation, where the numerous species of Cacti form impenetrable thorny thickets. Here the Road-runner wanders in solitude, subsisting upon grasshoppers, mice, lizards, etc.

"It is most usually met with upon the ground, and as soon as it discovers the presence of danger, or the intruder, instantly runs off with remarkable fleetness to the nearest thicket or hill, where it generally escapes from its pursuers, either by concealment, or a short flight from one hill to another. If a tree with low branches be convenient it will spring into that, and soon reaching the top will fly off to the distance of an hundred yards or more; it appears to rise from the level ground with much difficulty. It is very quick in its motions, active and vigilant; indeed its fleetness enables it to elude its pursuers, although one may be mounted on a good horse, or a dog may be in the train; but this is only for a short distance, as it could soon be run down by the horse or dog, were not some convenient thicket or hill near, from which to take its flight from the latter, or conceal itself among the branches of the former."

Fam. PICIDÆ.

159. *Campephilus guatemalensis* (Hartl.).

Mazatlan, Grayson; Rio de la America, Xantus.

"This fine species is common in the larger forests, and a constant resident."

160. *Dryocopus scapularis* (Vig.).

Mazatlan, Grayson, Xantus; Plains of Colima, Tupila River, Xantus.

"Common, and well distributed in the *tierra caliente*; a constant resident."

161. *Picus scalaris* var. *graysoni* Baird.

“ “ Proc. Bost. Soc. of N. H., XIV., p. 273.

“ *lucasanus* Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 354.

Mazatlan, Grayson, Xantus ; Tres Marias, Grayson.

“I found this species abundant in the Islands of the Tres Marias, where it is a constant resident. It there bores its nest in the tall and soft flower stem of the maguey plant. It is also common upon the main-land in this locality. It subsists entirely upon insects.”

Prof. Baird considers the bird from Mazatlan and the Tres Marias to be a variety of *P. scalaris*, to which he has assigned the name given above ; it more resembles the typical *P. scalaris* than it does *P. lucasanus*, to which Dr. Finsch refers it. *P. lucasanus* is also a race of *P. scalaris*, but with longer wings, bill, and tail. The characteristics of the different varieties of *P. scalaris* will be pointed out by Prof. Baird in his new work on the Birds of North America, soon to be published.

162. *Sphyrapicus varius* (Linn.).

Plains of Colima, Xantus.

163. *Melanerpes formicivorus* (Sw.).

Tonila, Jalisco, Xantus.

164. *Centurus elegans* (Sw.).

“ “ Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 356.

Mazatlan, Grayson.

“Common visitant ; also in Guadalajara, Tepic and Sonora.

“This handsome woodpecker is one of the most common species inhabiting the region of Mazatlan, and is noted for boring its nest in the Giant Cactus (*Cereus giganteus*), which, with wonderful perseverance and labor, amid the innumerable sharp spines of this singular plant, it picks out a hole projecting downwards, sufficiently ample for its nest. The inner wood of this cactus is very tough and fibrous, and it really seems astonishing that the bird is at all able to penetrate to the depth at which it generally forms its nest. The entrance is just sufficient to admit one at a time, but gradually widening as it descends to the depth of six or eight inches, where the eggs are deposited on the bare wood. Both male and female work at the nest until finished. They also feed upon the fruit of this plant, which, when ripe, is the most beautiful carmine red.

“The nest once made is used for some years after, if not too much distorted by the growth of the plant. This woodpecker, however, does not confine itself exclusively to the cactus for making its nest ; the smooth trunk of the palm is also a favorite ; sometimes as many as two or three nests may be seen in the stem of one palm, and frequently the tree is ultimately destroyed from this cause in a singular manner. The small seeds of the Wild Fig (*Ficus americanus*) are deposited in the woodpecker's nest, either by bird or bat, which the moisture of the rainy season causes to germinate, and the peculiarly rapid growth of this tree, soon after germinating, sends to the ground a tendril, which takes root in the moist earth, and in a few years the slender palm is entirely enveloped in the powerful embraces of this giant of the woods. I have often seen the singular vegetable phenomenon of the crown of the palm projecting from the body and above the wide spreading branches of the wild fig, thus having the appearance of one trunk and two different heads.

“The eggs are generally three in number, and of a transparent white.”

165. *Centurus uropygialis* Baird.

Mazatlan, Guadalajara, Tepic, Grayson.

“To be met with at all seasons of the year in some localities, not abundant. It bores its nest in decayed trees, and sometimes in the stem of the palm.”

Fam. PSITTACIDÆ.

166. *Sittace militaris* (Linn.).

“ “ Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 352.

Mazatlan, Grayson.

“This magnificent species inhabits the western part of Mexico; found only in that belt of land known as the ‘*tierras calientes*,’ which lies between the seacoast and the Cordilleras chain. Here it migrates from one locality to another in quest of food suited to its taste, but never crossing the principal chain to the eastward. I have found it, however, very far up the mountains, at an altitude of three or four thousand feet, when such aliments as they were partial to being in season drew them from the lowlands to the mountains. It may be found at all seasons of the year near the seacoast, from Mazatlan southward to Acapulco, but they are more particularly abundant in the region of Rio Mazatlan, where they find plenty of subsistence in the great forest here abounding.

“The Guacamayo is so called by the natives from the fact that it never descends to the ground but once during the year, and that is in the month of May; hence the name literally translated means ‘May Guaca.’ They alight upon the ground at this season of the year in search of a certain kind of hard nut, of which they are very fond, and no longer find in the trees which bear it. The tree of this nut the Mexicans call ‘Ava,’ a species of ‘*Nux Vomica*’; both the milky sap of the tree, as well as the fruit, are deadly poison to any other animal but this parrot. The natives use the sap for stunning fish. The tree grows near the borders of rivers, or in rich alluvial valleys, to a large size. The wood is white and tough, the outer bark armed with short and sharp spines; the leaf is broad and ovate; the pod that contains the fruit is spherical, and about twelve inches in circumference, divided into sixteen sections, in each of which is the button-shaped kernel. The shell is exceedingly hard, but the enormous bill and powerful jaws of the Guacamayo enables it to split each one of the sections with apparent ease. From the time this nut commences to ripen in December until it disappears about the beginning of spring, it forms the principal article of subsistence for this macaw. It also feeds upon the small cocoanut, or nuts of the ‘Royal Palm,’ which are also very hard, but not proof against the strong bill of this parrot. The weight of the Ava ball, when green, exceeds a pound, yet I have seen with surprise these parrots after gnawing off the tough stem, handle it in their huge claws without inconvenience, and even fly a short distance with it in their beaks. It also feeds upon various species of Acacia beans, together with other kinds of wild fruit; the corn fields are sometimes visited by it.

“The Guacamayo is gregarious, except during the breeding season, but continue in pairs throughout the year. When migrating to some distance they pass at a great height, flying in pairs, uttering their discordant and harsh cries. They congregate for many miles around to some chosen spot to roost, which they continue to visit for many months, roosting upon the topmost branches of the tallest trees.

“They breed in the holes of trees, usually in the Higuera, or Wild Fig, which is the largest tree of these forests, depositing their eggs upon the bare wood; the eggs are white, two in number, and a little less than those of the common hen; their breeding season commences in April, and both male and female perform the duties of incubation.”

167. *Conurus holochlorus* var. *brevipes* Baird.

“ “ Proc. Bost. Soc. of N. H., xiv., p. 298.

Socorro Island, Grayson.

“Upon stepping on the shore of this island for the first time, I felt as one always feels when entering upon a strange land, where man has but seldom made his footprints, and where all was silent, but the melodies of the little songsters that gazed with wonder into my eyes. This feeling of interest or curiosity was the more augmented as I entered a grove of green trees that sheltered numbers of the handsome green parrots that climbed among their branches, or sat near the ground on some low twigs, caressing each other, looking at me with silent astonishment, without appearing to have the least sense of fear at my presence. I was the first human being in all probability they had ever beheld; how little they suspected that man, the destroyer, now stood before them, with the death dealing instrument on his shoulder. With a tender solicitude for their unsophisticated tameness, I felt a conscientious delicacy in shooting one, even for a specimen; but when I remembered that I came for the purpose of making ornithological collections, and that a few of them were

required for the advancement of the science, as well as a new addition to the drawings in my portfolio, I no longer hesitated, but selecting the most adult and distant one from me, fired and killed it. The report of my gun awakened the entire grove from its dreamy spell. The greatest tumult ensued; they were terror stricken, but they knew not the cause; one of their number lay weltering upon the ground in the agonies of the last struggle for life. Around this they gathered, unmindful of my presence, perching upon the low brush over it, and even upon the ground, when suddenly their chattering, whistling voices ceased, and they all seemed to gaze with mute amazement, doubtless for the first time, on the strange mystery of death.

"I soon found that I did not require my fowling-piece to procure specimens; they were so remarkably tame as to be easily taken with a running noose fixed on the end of a rod. Three cages were filled by the boys, but were unfortunately left, owing to our sudden and unexpected departure from the island. I, however, brought away a sufficient number of skins."

168. *Conurus petzii* (Hahn.).

Mazatlan, Grayson, Bischoff; Plains of Colima, Manzanilla Bay, Rio de Coahuylana, Xantus.

"This species is common and resident."

169. *Chrysotis leuallantii* Gray.

" " Proc. Bost. Soc. of N. H., xiv., p. 271.

Tres Marias, Grayson; Tupila River, Rio de Coahuylana, Xantus.

"It is only within very recent years that one of the Tres Marias Islands has become partially inhabited by the cutters of Cedra, and as recently as 1865, when I visited these islands for the first time, I found these birds so tame and unsuspecting at the approach of a human being, as to be easily taken by simply putting a running noose of twine upon the end of a slender pole, and slipping it gently over the head while they are busy feeding among the low branches, or quietly sitting upon a limb of a tree. Many of the parrots are captured by the woodcutters and sold to the vessels touching there for a cargo of timber. They are also carried to Tepic, San Blas, Mazatlan, and other points on the coast, and sold at from one to five dollars. Upon a subsequent visit to these islands, in 1867, on my return from Socorro Island, I found that their numbers had diminished considerably, and they had become so shy as to be difficult to approach; they had learned the arts and tricks of man, and kept him at a respectful distance.

"I saw nests of this parrot, all in the hollows of large trees, one only of which I was able to reach; this was in a large smooth bark tree, known here as 'Palo Prieto'; the eggs (two in number) lay upon the bare rotten wood, which had been a little scooped out, forming a slight indentation. The eggs are a clear white, a good deal larger than those of a tame pigeon, and of an elliptical form."

170. *Chrysotis albifrons* (Sparrm.).

" " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 352.

Mazatlan, Grayson, Bischoff.

"This lovely species inhabits the warmer regions of Western Mexico, and is closely allied to the Red-fronted Parrot; although it is smaller, and its plumage more brilliant, yet its natural habits are so nearly similar that the description of one would answer for the other. They are found in the same localities, and subsist upon the same kind of food. But the flocks keep separate, never assimilating with its near congener. They are, however, not so numerous as the red-fronted species. It is easily domesticated when taken young, and can be taught to utter words very clearly. It is a great favorite with the natives."

171. *Chrysotis finschii* G. R. Gray.

Mazatlan, Grayson, Xantus, Bischoff; Rio de la America, Colima, Xantus.

"The Red-fronted Parrot is distinguished by a rather prominent forehead of peach red or dark carmine, the feathers composing it are short and bristly; the bill nearly white or pale yellow, and the tongue black. It is

a handsome and well known species in western Mexico, inhabiting the region of *tierras calientes*, or western slope of the Cordilleras, more abundant near the seacoast than the mountainous regions, and its geographical distribution extends from southern Sonora to Tehuantepec, and perhaps farther south. They are gregarious, assembling in large flocks, and are more numerous in the region of Mazatlan than any other portion of the country that I have visited. The forests in some localities, particularly where some kinds of fruit are in season, appear at times to be alive with them, only in the morning and evening, however, when they are seeking for their favorite food; they are then flying hither and thither through the woods, or perching and climbing among the branches that contain the fruit they are in search of, keeping up at the same time an incessant din of chattering, and this, mingled with the loud and harsh screams of the large green macaws, produces a very discordant and disagreeable forest music. They often visit the cornfields or milpas in great numbers, about the time the green corn or maize commences to mature, committing great depredations, and often destroying the small milpas of the natives unless they are guarded.

"If taken from their nest before they are fledged, they may be taught to pronounce some words very distinctly, as well as sing and whistle tunes. Their season for incubation commences in the latter part of March, or early part of April, at which time they quietly divide off into pairs and seek a hollow in some large tree, where they deposit their eggs without any more nest than the bare rotten wood, which is generally smoothed off a little by the birds, both of which perform an equal part in the task of incubation; the eggs, two in number, are a clear white; the young are fed by the parents for some time after they are able to fly. The pair from the same nest generally remain together through life. By an extraordinary provision of nature, it is seldom (if ever) that the young are of the same sex, but always male and female.

"It is the presumption of many that parrots do not drink water in their wild state, but this is a mistake; they have their watering places, which is on some secluded brook overhung with trees, where they go about the hour of ten or eleven, A.M., to drink, and often bathe also."

172. *Psittacula cyanopyga* De Souancé.

" " Proc. Bost. Soc. of N. H., xiv, p. 271.

" " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 353.

Mazatlan, Grayson, Bischoff; Tres Marias, Grayson; Manzanilla Bay, Xantus.

"The smallest of parrots, and quite abundant in the region of Mazatlan and the Tres Marias Islands; they associate in considerable flocks; their flight is much like a flock of common rice birds; resident."

Fam. STRIGIDÆ.

173. *Speotyto cunicularia* var. *hypogæa* (Bp.).

Athene cunicularia Proc. Bost. Soc. of N. H., xiv, p. 270.

Tres Marias, Mazatlan, Grayson.

"Found usually along the open sea beach at night in search of small crabs, upon which it chiefly subsists in the Marias; also met with upon the main-land in this locality."

174. *Micrathene whitneyi* (Cooper).

" " Proc. Bost. Soc. of N. H., xiv, p. 300.

Socorro Island, Grayson.

"Three specimens of this least of all owls were captured on the island. They were always found among the branches of the evergreen low trees. It seems to feed entirely upon the small land crabs, which are abundant near the sea."

175. *Glaucidium ferrugineum* (Max.).

Mazatlan, Grayson.

"A common species in this locality, and resident."

176. *Glaucidium infuscatum* var. *gnoma* Wagl.

Mazatlan, Grayson ; Colima, Xantus.

177. *Syrnium virgatum* Cass.

Mazatlan, Grayson ; Colima, Xantus.

178. *Strix flammea* var. *pratincola* Bp.

“ *pratincola* Proc. Bost. Soc. of N. H., xiv, p. 270.

Tres Marias, Grayson ; Colima, America River, Xantus.

“This species is common all over Mexico ; I discovered a nest in the hollow of a tree on the Rio Mazatlan.”

Fam. FALCONIDÆ.

179. *Circus cyaneus* var. *hudsonius* (Linn.).

Mazatlan, Grayson.

180. *Accipiter fuscus* (Gm.).

Mazatlan, Grayson.

“This well-known and widely distributed species is very common in Western Mexico, where I have found them in all seasons of the year, and in different stages of plumage. One day I witnessed an act of this hawk which goes far to illustrate its habits of perseverance in hunting out the game it may be in quest of; a brood of half grown chickens was attacked by it, one of which had taken shelter beneath the bottom rail of a fence; there was barely room between the rail and the ground to admit the fowl; the little hawk, after perching for a few moments on the top of the fence, lit upon the ground, and actually reached its slender claws under the rail, dragged the unfortunate chicken from its hiding place, carried it off a hundred yards to the bottom of a dry creek, where I followed it up and recovered the chicken, with which he was unable to rise above the bank of the creek. Field mice also constitute a part of its subsistence, but to quails and young chickens he seems to give a decided preference. I have never been able to find the nest of this hawk, though I am well convinced it breeds in this region.”

181. *Accipiter cooperi* Bp.

Mazatlan, Grayson.

“Like the Sharp-shinned Hawk, and one or two others of a closely allied species, it has the habit of flying very swiftly near the ground when hunting for its prey, as if to come upon it suddenly without being seen; when thus upon its tour of rapine, the birds lay close under cover, well knowing the brave and desperate spirit of this keen little hawk. At last he surprises a flock of quail, his favorite game; onward he dashes among them; the affrighted birds are so confused and panic-stricken, as scarcely to know which course to flee; they scramble in every direction, but the reckless hunter in an instant has selected one, and furiously dashes headlong amidst the brambles and grass in which the unfortunate game endeavors to make its escape, but too late — the crying and plaintive notes of the poor quail are heard; he has seized it in his powerful and sharp claws, and immediately bears it off, flying near the ground, until he finds some secluded spot beneath a canopy of bushes and vines, where either upon a prostrate log or on the ground, it devours its prey at leisure.

“I have found this hawk not uncommon in the locality of Mazatlan during the winter months.”

182. *Asturina plagiata* (Licht.).

“ “ Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 325.

Mazatlan, Grayson.

“I have met with this hawk in all of Western Mexico wherever my rambles have led me, from Tehuantepec to Sinaloa. It is rather sluggish in its habits, sitting for hours upon the limb of some decayed tree in apparent listlessness, permitting you to approach very near without moving from his perch, then flying but a short

distance before again alighting. Although its flight is vigorous and quick, and the feet and claws sharp and strong, yet its prey consists of the more humble and weaker creatures of the wood and field, such as lizards, small snakes, field mice, etc. These are indeed his staff of life. But in the general breeding season of birds, when the young are not fully fledged, and are just beginning to try their tender wings from the parent nest, it is then it finds opportunities to change its usual diet of lizards and snakes, to the more tender young birds of any species that may come in his way. He often visits the poultry of the natives and carries off young chickens; will follow the Chachalaca (or wild tree chicken) and her young brood through the densest woods, in his skulking way, until an opportunity offers to pounce upon one of them, thus keeping the mother constantly on the alert; she will defend her brood with great courage when he makes the attack, but he is often too quick for her vigilance, and carries off one at a time from day to day, until her precious chicks are mostly all devoured by the sly manœuvring of this hawk. The nest is generally placed in the branch of some very thorny acacia, and inaccessible in consequence of the thorns; it seems to be composed of dry twigs, grass and moss; incubation takes place as early as February and March."

183. *Micrastur semitorquatus* (Vieill.).

Mazatlan, Grayson.

"Among the great variety of hawks to be met with in a single day's excursion in the locality of Mazatlan, none are so easily recognized as this peculiar and interesting species. I have only found it in the heavy forests, or the immediate vicinity of a thickly wooded country, where its slender form and lengthened tail attracts our attention as it swiftly glides through the tangled woods, with that remarkable ease which we have often noticed in the Sharp-shinned Hawk (*A. fuscus*). It appears to be strictly arboreal in its habits, and possessed of wonderful activity, either in springing from branch to branch without opening its wings, or rapidly darting through the intricacies of the brush with apparently but little difficulty. I have seldom seen one of these hawks in an open country, and have never seen one flying higher than the tree tops, where they are met with. Its wings are rather short, and its flight is performed by rapidly repeated strokes, only for a short distance at a time. It preys upon various species of wood birds, which it captures by darting upon them on the ground or in the bushes; but the Chachalaca is its favorite game; this is a gallinaceous bird, or wild chicken, about the size of, or lighter than, the common hen, and is entirely arboreal, seldom running upon the ground, but is able by its peculiarly formed feet to cling to, or spring rapidly through, the thickest branches with great agility; but this hawk follows it with equal facility, until an opportunity offers to strike its prey, then both come to the ground together, the hawk being the lighter bird. I witnessed a scene of this kind that took place when I was endeavoring to get a shot at a Chachalaca, as it was jumping about the very thick branches of an acacia, overgrown with lianes; it appeared to be in great distress, uttering its harsh notes of alarm, and spreading its fan-shaped tail; suddenly I saw one of these hawks pounce upon it, when with harsh screams of terror and pain the Chachalaca dragged his captor to the ground, where they struggled for a few moments, but the unfortunate bird was soon overcome. The struggling and screams of the Chachalaca created a great commotion among the denizens of the woods; far and near were heard the harsh cries of other members of its family, and the Urraca Magpie, with streaming tail and ludicrous gesticulations, as well as the Blue-back Jay, and other birds in the neighborhood, gathered around to witness the scene of rapine; suddenly appeared in the midst of this clamor a larger hawk (*Buteo harrisi* Aud.), which rushed at once upon the captor of the Chachalaca; unable to withstand so heavy a charge, he was compelled to give up his honestly captured prey to a superior force, thus proving the old adage that 'might is right.' The slender but compact figure of our present subject was now seen perched upon a neighboring bough, scrutinizing with a vicious eye, the more powerful but less active bird of prey, as he vainly attempted to bear off the lifeless form of the Chachalaca; but there was one yet mightier than he, I observed it for a few moments, then shot it, as also the Long-tailed Hawk, thus securing all three.

"They build their nest of dry twigs and moss, which is placed in a very tall tree, but below the higher branches; the only nest I have seen was inaccessible, therefore I regret that I am unable to describe the eggs."

184. *Geranospiza gracilis* var. *niger* (Dubus).

Mazatlan, Grayson.

"Among the great variety of the family of this region, this one seems to be the most delicately and feebly formed as well as the rarest. I have never been able to procure but two specimens, which I found near fresh

water ponds in the low grounds near the Rio Mazatlan. One shot in February had just captured a large water frog; the other was shot near the same locality in April. In the stomach of each I found partly digested the remains of frogs, and in one a small water snake. It is of a sluggish nature, sitting for hours upon the limb of a tree in apparent listlessness."

185. *Herpetotheres cachinnans* (Linn.).

Mazatlan, Grayson.

"This remarkable species is only to be met with in the thick forests of the warmer regions, its geographical range extending very probably into Central and South America. I found it equally as common in the locality of Tehuantepec as that of Mazatlan; northward its range stops in the densely wooded districts of the western and southern parts of Sonora. It is one of the most peculiar and easily identified hawks of this region, not only from its well-defined markings, its large and broadly crested head, but its well known scream of Guaco (pronounced *waco*), which is often repeated for an hour or so at a time, either late in the evening, or early in the morning. When heard at twilight amid the solemn and eternal woods of these latitudes, a feeling of melancholy is produced upon the weary traveller, far from his native land, as he threads some dark and intricate path, crowded on all sides with impenetrable undergrowth, and overhung with the arched branches of trees of immense size and strange forms. This hawk is often found in pairs, and the answer to each other's call makes, at times, a singular medley of talking and laughing together. It is seldom seen in an open country, or soaring at any great height. Its flight is a quick successive movement of the wings, passing through the woods, or across an opening with rapid ease. It subsists almost entirely upon reptiles and rodents, which its stout claws are well adapted for holding, and its rough scaly legs are armored against their bites. It sometimes, however, preys upon birds."

186. *Falco peregrinus* var. *anatum* Bp.

" " " *nigriceps* Proc. Bost. Soc. of N. H., xiv, p. 268.

Mazatlan, Tres Marias, Grayson.

"In the vicinity of Mazatlan I have, at different times, observed the American Peregrine, some of which I shot and preserved. A pair of these falcons have bred in a cliff on an island near Mazatlan, called Venado (deer) island; I discovered the cyry in the early part of April, 1862, in company with Lt. Remington, of the British navy. We were in search of the eggs of a certain species of tern, but could find no others than those of the Brown Pelican (*P. fuscus*), the nests of which were quite numerous; whilst thus occupied, we observed a pair of Peregrines flying around, and sometimes darting into a cavity in the cliff far above our heads; we attempted every means to reach the nest, but found it inaccessible. Before leaving the spot, we saw one of them enter the cavity with a bird in its claws, from which we came to the conclusion that the nest contained young. The food of the Peregrine Falcon is principally birds of all kinds, but it shows a decided partiality for the smaller species of ducks, pigeons and the like. It seldom strikes its prey upon the ground, and should a bird enter cover when being pursued, it immediately passes on in search of other objects of its fancy."

187. *Hypotriorchis columbarius* (Linn.).

" " " Proc. Bost. Soc. of N. H., xiv, p. 269.

Mazatlan, Tres Marias, Grayson.

"I have found this species quite common in Western Mexico, as far west as the Islands of the Tres Marias, off the coast some seventy or eighty miles. I have shot it in the vicinity of Mazatlan, also Tepic, where it is frequently to be met with. I observed one of these hawks whilst in Tepic, perched daily upon the top branches of a tree that grew upon the plaza, being near my window where I was making some drawings, and could see all its movements. It seemed to subsist entirely upon the small Cow-pen Blackbirds, which are very numerous about the streets and vacant lots of Tepic. As soon as it captured its victim it immediately returned to this same tree, where it was devoured at leisure. I have known it to capture three of these birds from eight o'clock to twelve, m. It remained, and continued its usual avocations in the same locality nearly the whole time I remained in Tepic, from November to January."

188. *Hypotriorchis femoralis* (Temm.).*Falco femoralis* Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 362.

Mazatlan, Grayson.

"This handsome little hawk may be recognized when at some distance off, while upon the wing, by its lengthened and fan-like tail. I found it not uncommon in the vicinity of Mazatlan and San Blas, where I have shot and preserved specimens in the winter months, and with many opportunities of observing its habits. It seems to prefer a sparsely wooded country, where there are scattered trees and low bushes. In its habits I am reminded at times of the Sharp-shinned Hawk (*A. fuscus*) in its stealthy manner of hunting for its prey beneath the thick foliage of the woods, flying near the ground, or perching in secluded places, from whence it watched, cat-like, for quails, ground doves, etc. It, however, may be seen at other times, falcon-like, boldly pursuing its prey in the open country, and the smaller species of ducks, as well as pigeons, plovers and sand-pipers, are attacked and captured on the wing by this swift flying little falcon. I am not aware that it breeds in this locality, not having seen one during the season of nidification."

189. *Hypotriorchis ruficularis* (Daud.).

" " " Proc. Bost. Soc. of N. H., xiv, p. 269.

Mazatlan, Tres Marias, Grayson.

"We should see this species in its ethereal element to become enraptured with its graceful movements, and the wonderful rapidity of its flight. I have seen seven or eight at different times in the locality of Mazatlan, and it was a long time before I was able to procure a specimen. Whilst hunting in the vicinity of San Blas, in an old clearing, I saw one of these hawks dart at and seize a little ground dove, when it was endeavoring to make its escape by flight; this dove is a swift flyer, but the little peregrine came up with it so suddenly as to make it appear almost stationary; indeed it passed over my head like an arrow just sprung from a bow; after striking its prey it ascended to the top of one of the tall dead trees in the clearing, to make his morning repast. Again I was disappointed in not securing this hawk. I at last succeeded in shooting one near the Rio Mazatlan in the month of February, 1867. I regret I am unable to describe its nest and eggs, never having seen the eyry of this rare little falcon."

190. *Tinnunculus sparverius* (Linn.).

" " " Proc. Bost. Soc. of N. H., xiv, p. 269.

Mazatlan, Tres Marias, Grayson.

"Unlike the true falcons, it feeds almost exclusively upon insects, such as grasshoppers, beetles, slugs, etc., sometimes, but rarely, it captures a field mouse or sparrow. It is very seldom seen in the woods, but is always to be met with in an open grassy country, or an old field, perched upon a stake or dry shrub, where it watches patiently from day to day for the objects upon which it preys. It may be frequently seen balancing itself in the air for a few moments, at a moderate height, and then suddenly darting to the ground for a grasshopper. The Sparrow Hawk lays its eggs in the hollow of some tree, but more frequently in a hole which the larger species of woodpeckers have made so laboriously for their own nest. The eggs, sometimes five in number, are of a pale buff color with numerous specks, or blotches of reddish brown; they are a little larger than those of the domestic pigeon; the male assists in the duties of incubation, and during this season is particularly attentive to the female. I have known this hawk on several occasions to roost in deserted houses, where beneath the roofs of such it found shelter from the inclemency of the weather."

191. *Buteo borealis* var. *calurus* Cass." " " *montanus* Proc. Bost. Soc. of N. H., xiv, p. 301.

Mazatlan, Tres Marias, Grayson.

"A common species in the Marias, also found in the vicinity of Mazatlan. Resident in these localities."

192. *Buteo borealis* var. *costaricensis* Ridg.

“ “ “ *montanus* Proc. Bost. Soc. of N. H., xiv, p. 301.

Socorro Island, Grayson.

193. *Buteo nigricollis* Lath.

Mazatlan, Grayson.

“No locality that I have ever visited in my researches for the objects pertaining to ornithology equals that where the Mazatlan River forms an expansive valley near the seacoast, for the great numbers and varieties of hawks there met with. They seem to assemble in this favorite spot from far and near, and almost all the known species are represented here during the dry season. This may be accounted for from the fact that this extensive region is diversified with rudely cultivated farms, old fields overgrown with brambles and weeds, impenetrable thorny woods and forests of large trees, interspersed here and there with stagnant lagoons and lakes, through the centre of which wind the clear waters of the Rio Mazatlan. Here abounds animal life in great abundance; the old neglected fields overgrown with matted vegetation harbor innumerable field-mice and other rodents; here various species of lizards and snakes dart through the thickets when scared from their sunny beds. The lagoons furnish other reptiles; swarms of ducks and various kinds of water-fowl resort to their slimy waters; the woods are enlivened with great numbers of birds, all of which furnish to the different species of hawks their favorite prey.

“The remarkable species which heads this article I discovered in this locality; it is entirely new to me, and I have not yet seen it mentioned in any volume at my command; the specimen has been sent to the National Institution at Washington for identification. The flight of this hawk seems rather heavy, resembling somewhat the common Fish Hawk, the wings appearing very broad, and the tail remarkably short. Upon examining the contents of the stomach after skinning it, I found only the remains of fish, one of which had been but freshly devoured; it was a species of perch found in the lagoons and rivers of this region.”

194. *Buteo albonotatus* Gray.

Mazatlan, Grayson.

“Not common, resident. It flies easily and gracefully, sometimes at a great height. I have seen it frequently balance itself in the air when in search of its prey, which it appeared to be watching for in the grass or weeds, where such rodents as it preys upon inhabit. I have sometimes, when it was sailing around, taken it for the Turkey Vulture, its flight and perigrinations in the air, as well as its color, at a distance, so much resembling that common bird.”

195. *Craxirex unicinctus* var. *harrisii* (Aud.).

Morphnus unicinctus Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 363.

Mazatlan, Tepic, Jalisco, Grayson; Colima, Xantus.

“A common species at all seasons, in every locality.”

196. *Urubitinga zonura* (Shaw).

Mazatlan, Grayson.

“This fine species is not a very common one; it is resident in the interior parts of the *tierras calientes*, and does not inhabit the vicinity of the esteros and seacoast as *U. anthracina* does.”

197. *Urubitinga anthracina* (Licht.).

Mazatlan, San Blas, Grayson.

“Common at all seasons; usually found about the esteros and marshes near the seacoast, subsisting chiefly upon land crabs.”

198. *Pandion haliaetus* var. *carolinensis* (Gm.).

" *carolinensis* Proc. Bost. Soc. of N. H., xiv., p. 268.

Colima, Xantus; Tres Marias, Grayson.

"I discovered the nest on a rock adjacent to the shore of the northern Marias Island, with young in it, and another nest in a cactus; it is quite common about Mazatlan."

199. *Polyborus tharus* var. *audubonii* Cass.

" *audubonii* Proc. Bost. Soc. of N. H., xiv., p. 268.

Mazatlan, Tres Marias, Grayson; Colima, Xantus.

"In general appearance this resembles some of the larger hawks, and although it subsists principally on dead animals and other offal, it, however, does sometimes capture young or disabled birds, lizards, snakes and land crabs. It generally carries off its prey in the beak, but I have also frequently seen it using the claws for that purpose, as the hawks do. It walks with facility on the ground, and may often be met in the thick woods walking about in search of reptiles, etc., with as much ease as an ambulatory fowl.

"It is sluggish in its habits, and rather docile, frequenting the vicinity of towns and ranches, often in company with the Black Vulture, with whom it performs no inconsiderable part as a scavenger.

"I found the Caracara quite abundant on the Tres Marias Islands; in the vicinity of Mazatlan it is a very common species, and, in fact, all parts of Western Mexico that I have visited. After gorging themselves with offal they sit perched for hours upon a branch of a tree, or the thorny tip of a cactus, bringing to mind the supposition that this may be the celebrated eagle of the Montezumas, now the escutcheon of the Mexican banner.

"The nest of the Caracara is generally placed on trees, and sometimes said to be on rocky cliffs. One which I discovered, and had a fair opportunity of examining, was built on the huge branches of the giant cactus, about fifteen or twenty feet from the ground. The nest was large and loosely built, of coarse dry twigs, and lined with grass and leaves; it contained three eggs, which were nearly ready to be hatched; they were about the size of a domestic hen's egg; the ground color a dirty white with numerous large blotches of red-dish-brown and small irregular spots, more confluent around the larger end."

Fam. VULTURIDÆ.

200. *Sarcoramphus papa* (Linn.).

Mazatlan, Grayson.

"Three specimens of this species were captured in the mountains near Acaponetti, about eighty miles southeast of Mazatlan; the only place it seems in which they have been discovered in Northwestern Mexico. The three individuals were captured in this locality through the ingenuity of an old native Indian. One died (fortunately for me) after reaching Mazatlan; it was a good specimen, and a female."

201. *Cathartes aura* (Linn.).

" " Proc. Bost. Soc. of N. H., xiv., p. 267.

Mazatlan, Tres Marias, Grayson; Colima, Xantus.

"This is very numerous in Western Mexico, and I found it as far south as Tehuantepec, and in the Tres Marias. They seem to be constantly engaged upon the mission for which a wise dispensation of Providence has intended them, that of passing in large circles at a moderate height, seeking out and devouring the putrid bodies of animals, offal, and other filth, which would breed a pestilence were it not for such agencies as the Turkey Buzzard and its coadjutors."

202. *Cathartes atratus* (Bartram).

Mazatlan, Grayson.

"It may be met with in all Mexico, but is more common in the *tierras calientes*. They are gregarious at all seasons of the year, associating in considerable flocks, and when one of their number discovers a dead car-

cass, the others soon follow, when they fall to work devouring it with such greediness and pell mell confusion, as to appear like a black disorderly mass of wings and tails, making at the same time a hoarse blowing noise; often at this interesting moment, when they are the least watchful, a dog or coyote will bound in among the pile, scattering them in every direction; most of them will settle on the ground near by, whilst others will sail around, waiting patiently until the dog is satisfied, when they again commence on the carcass, and if not molested will gorge themselves to such a degree that many of the flock are unable to rise from the ground. They will frequently attack young lambs and pigs, biting off their ears and tails; I have seen a whole litter of pigs mutilated in this way; this is the only complaint ever made against this useful scavenger. They are very numerous about Mazatlan, and to a new comer present a strange scene by their exceeding tameness; they line the beach at times, feeding upon the offal there found. They may be seen sitting upon the houses and fences sunning themselves, in rows, looking very lazy indeed, but they are the scavengers, and are permitted to do just as they please. On the outer points of the port of Mazatlan, is a high peaked island near the shore, partially overgrown with low scrubby trees and cactus, called the Creston. For years the Black Vultures have made this their roosting place in company with the Gray Pelican, perching upon the low brush, and even upon the rocks, in great numbers."

Fam. COLUMBIDÆ.

203. *Columba fasciata* Say.

"Mountains," Grayson.

204. *Columba flavirostris* (Wagl.).

" " Proc. Bost. Soc. of N. H., xiv., p. 274.

Mazatlan, Tres Marias, Grayson; Sierra Madre, Xantus.

"This fine species in some localities of Western Mexico is quite abundant, particularly in the region of Mazatlan River. It frequents the larger forests, and feeds upon various kinds of berries, acorns, and the tender buds of some trees. It is partially gregarious, but is often seen solitary and in pairs. Small flocks of from twenty to fifty migrate from one part of the country to another in search of its favorite food. I have found it at a considerable height on the western slope of the Sierras Madres, feeding upon acorns, that are there in abundance in some seasons. The flesh of this pigeon is tough, and sometimes bitter to the taste, caused by the bitter acorn, and also by an astringent kind of berry, upon which they may be subsisting at the time. As a game bird it is inferior to most of our pigeons for the table, but being a large and handsome bird it is sure to attract the attention of the gunner. They are not easily approached, however, being very shy, and without the strictest caution the hunter would not be able to fill his bag with this game in a long day's tramp."

205. *Zenaidura carolinensis* (Linn.).

Mazatlan, Grayson.

"Common throughout Mexico, more so on the high central plains."

206. *Zenaidura graysoni* Baird.

" " Proc. Bost. Soc. of N. H., xiv., p. 299.

Socorro Island, Grayson.

"During our sojourn upon the island we saw and captured several of these doves, they were always alone and silent, with a melancholy look, as if lost. Two of them came separately to our camp, both of which we secured after watching their habits awhile. They were remarkably tame, appearing to be unconscious of danger, walking about on the ground picking up crumbs of bread."

207. *Chæmepelia pallescens* Baird.

“ “ Proc. Bost. Soc. of N. H., xiv., p. 300.

Mazatlan, Tres Marias, Socorro, Grayson.

“In Western Mexico, and particularly the Mazatlan region, it is more abundant than in any other locality, frequenting the brushy and grassy districts, especially old fields, where the rank weeds furnish them with the small seeds upon which they feed. Their flight is strong and rapid, and when first started from cover their wings produce a whirring sound, almost equal to the quail. They do not associate in flocks, but are found scattered singly or in pairs; in like manner they migrate from one place to another, more frequently solitary. The flesh constitutes a delicate morceau for the breakfast table, as it is white and juicy, but they are seldom shot for this purpose, being too small for the waste of ammunition, or the trouble of preparing them for the table.”

208. *Scardafella inca* (Less.).

Mazatlan, Grayson.

“I found this little species also in Guadalajara and Tepic; it is distributed throughout Western Mexico generally, and a constant resident.”

209. *Melopelia leucoptera* (Linn.).

Mazatlan, Grayson; Colima, Xantus.

“Among the varieties of doves which I have found inhabiting Western Mexico and its islands, the White-wing Dove is one of the most common and numerous. Occasionally they may be seen in considerable flocks visiting the cornfields, for the purpose of picking up grains of corn, for which it shows a decided partiality, although its chief means of subsistence consists of small seeds and berries. The white of the wing, as well as its size, renders it conspicuous game, and a kind that can always be readily found by the hunter in the woods or fields, and easily procured. They are distributed over the greater part of Western Mexico, especially the *tierra caliente* region. I found it very abundant in Tehuantepec, and it is doubtless found much farther southward; northward it extends into Sonora. The cooing of this dove is loud, and considerably varied; it is not so plaintive as that of most of the genus. Their nests are formed of small dry twigs, loosely put together on the horizontal branches of trees, at a moderate height from the ground, usually in an exposed and careless manner. The male assists in incubation, and they rear two or three broods in a season, but this is not common. They are sometimes domesticated by the natives, and become very tame and familiar; but if their wings are suffered to grow, they soon wander off and mix with the wild ones.”

210. *Leptoptila albifrons* Bp.

“ “ Proc. Bost. Soc. of N. H., xiv., p. 274.

Mazatlan, Tres Marias, Grayson.

“This ‘ground dove,’ as its name indicates, is usually met with upon the ground in search of its food, or sometimes resting upon low branches, or old logs, and always in the thickest woods, out of which they are seldom seen. It walks and runs with great facility upon the ground, whilst its flight is always low amidst the bushes or underbrush, as if to conceal itself, and not long continued, usually alighting upon the ground beneath a massive canopy of underbrush, where it continues to walk or run to elude pursuit, or search for its food. When suddenly started from its retreat, the wings whir, accompanied by a whistling sound, very similar to that of the wood-cock. Its habits are solitary, never congregating into flocks, and only during the breeding season do we ever find a pair together. Differing from all our American doves, it deposits its eggs upon the ground, forming scarcely any nest; the eggs are two, and white; the young soon follow the mother, before being able to fly, like some of the gallinaceous birds.”

Fam. PENELOPIDÆ.

211. *Penelope purpurascens* Wagl.

Mazatlan, Grayson, Bischoff; Tonila, Xantus.

"This fine bird is entirely arboreal in its habits, and it is only to be met with in the large forests of the warmer regions of Mexico. Its flesh is white, and nearly as good as that of the turkey."

212. *Ortalida poliocephala* Wagl.

Tupila River, Xantus.

213. *Ortalida wagleri* Gray.

Mazatlan, Grayson.

"Iris dark brown, feet gray, bare space around eye reddish-blue, gills red. Length, $26\frac{1}{2}$ in.; wing, 10; tail, 12; tarsi, 3.

"This is the only species found in the locality of Mazatlan of the genus *Ortalida*. It is well distributed throughout the woods of the *tierra caliente*, from Sonora as far south as about the region of Colima; beyond that it is replaced by a closely allied species, which is very abundant in Tehuantepec, western side; neither of the species ever cross the Cordilleras to the eastern slope, so far as my observation is concerned."

Fam. MELEAGRIDÆ.

214. *Meleagris gallopavo* Linn.

Sierras Madres, Grayson.

"In the Sierras Madres, but does not approach the coast region."

Fam. PERDICIDÆ.

215. *Cyrtonyx massena* (Less.).*Ortyx massena* Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 357

Guadalajara, Sierra Madre, Grayson.

"This remarkable species inhabits the mountainous regions of Mexico; I found it quite plentiful near Guadalajara, and they are brought in great numbers to the market in the city of Mexico, from the mountains in the interior. I have seen a few pairs in some of the western spurs of the Sierras Madres, between this and Durango."

216. *Ortyx graysoni* Lawr.

Guadalajara, Grayson.

"I discovered this partridge in flocks at a rancho near Guadalajara; it inhabited the open grassy country, in which were clusters of small trees and thickets of brambles and cacti. There were several flocks met with in this vicinity, and no where else, in one of which there was an albino. This rancho is about ten leagues northwest of Guadalajara city, situated in a valley of considerable extent, through which a small stream of water flows, and appeared to be their favorite resort. Upon the sides of the surrounding hills I saw none, but found the Massena Partridge."

217. *Callipepla elegans* (Less.).

" " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 357.

Mazatlan, Grayson.

"An abundant and handsome species in this locality. I also found it in the State of Jalisco and Colima, but not as far south as Tehuantepec."

218. *Callipepla squamata* (Vigors).
Durango, Grayson.

219. *Philortyx fasciatus* Gould.
Plains of Colima, Xantus.

220. *Lophortyx gambelii* Nutt.
Sonora, Grayson.

"Not found in the locality of Mazatlan, but abundant in parts of Sonora."

Fam. TINAMIDÆ.

221. *Nothocercus sallæi* Bp.
Mazatlan, Grayson.

"The present species inhabits the dark forests of the western *tierra caliente*; it is solitary in its habits, and is confined principally to walking upon the ground, feeding on various kinds of seeds, berries and insects. During the season for incubation, which is in May and June, their long peculiar whistle can be heard for some distance; at such times an expert hunter, by imitating their notes, may easily call them to him; in this way I procured most of those shot by me. Their flesh is white and excellent, more tender and juicy than that of the quail."

Fam. CHARADRIIDÆ.

222. *Ægialitis vociferus* (Linn.).
Mazatlan, Grayson.

"Very common."

223. *Ægialitis semipalmatus* (Bp.).
" " " " Proc. Bost. Soc. of N. H., XIV., p. 285.
Mazatlan, Tres Marias, Grayson.

"An occasional visitant upon the shores of the Marias, also upon the main-land. Specimens shot in January and October."

224. *Ægialitis wilsonius* (Ord.).
Mazatlan, Grayson.

225. *Ægialitis nivosus* Cass.
Mazatlan, Grayson.

226. *Squatarola helvetica* Linn.
Mazatlan, Grayson.

"Not common in this region. Specimen shot in October."

227. *Aphriza virgata* (Lath.).
Colima, Xantus.

Fam. HÆMATOPODIDÆ.

228. *Hæmatopus palliatus* Temm.

“ “ Proc. Bost. Soc. of N. H., xiv., p. 284.

Mazatlan, Grayson, Bischoff; Isabella Island, Tres Marias, Grayson; Rio Zacatula, Xantus.

“ Frequently met with in pairs upon the shores of the Tres Marias at all seasons, also upon the main-land, sometimes in flocks; it breeds in this locality.”

229. *Strepsilas interpres* (Linn.).

Rio Zacatula, Xantus.

Fam. RECURVIROSTRIDÆ.

230. *Recurvirostra americana* (Gm.).

Rio de Coahuana, Xantus; Mazatlan, Grayson.

“ Winter visitor; not common.”

231. *Himantopus nigricollis* (Vieill.).

Mazatlan, Grayson; Rio de Coahuana, Xantus.

“ Makes its appearance in October, and remains until April; abundant.”

Fam. SCOLOPACIDÆ.

232. *Gallinago wilsonii* Temm.

Mazatlan, Grayson; Colima, Xantus.

“ Arrives in December, and is distributed in small numbers throughout the country, but not in sufficient numbers to make it worthy the sportman's attention; disappears in May.”

233. *Macrorhamphus scolopaceus* (Say).

Mazatlan, Grayson.

“ Not abundant; makes its appearance in October, and remains but a short time.”

234. *Actodromas minutilla* (Vieill.).

Mazatlan, Grayson, Bischoff; Mazanilla Bay, Xantus.

“ Common.”

235. *Calidris arenaria* Linn.

Mazatlan, Grayson.

“ A wandering species, sometimes found in flocks on the beach in September, October, and in the winter months, but not a constant resident.”

236. *Limosa fedoa* Linn.

Mazatlan, Grayson, Col. Abert.

“ Common in the winter months until late in the spring; a few remain throughout the summer.”

237. *Symphemia semipalmata* (Gm.).

Mazatlan, Grayson, Bischoff.

"A common species the entire year.

238. *Gambetta melanoleuca* (Gm.).

Colima, Xantus.

239. *Gambetta flavipes* (Gm.).

Mazatlan, Grayson.

"Not abundant; met with during the winter months."

240. *Rhyacophilus solitarius* (Wils.).

Mazatlan, Grayson.

"Common."

241. *Tringoides macularius* (Linn.).

Colima, Xantus.

242. *Numenius longirostris* Wils.

" " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 363.

Mazatlan, Grayson.

243. *Numenius hudsonicus* Lath.

" " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 363.

Mazatlan, Grayson; Rio Zacatula, Xantus.

Fam. TANTALIDÆ.

244. *Ibis alba* Linn.

Mazatlan, Grayson.

245. *Ibis guarauna* Linn.

Mazatlan, Grayson; Manzanilla Bay, Xantus.

"Numerous, and common at all seasons."

246. *Tantalus loculator* Linn.

Mazatlan, Grayson.

"Abundant at all seasons."

Fam. PLATALEIDÆ.

247. *Platalea ajaja* Linn.

" " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 358.

Mazatlan, Grayson.

"Common throughout the summer months; less so during the winter months, although it may often be met with in small numbers."

Fam. CANCROMIDÆ

248. *Cancroma cochlearia* Linn.

“ “ Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 358.

Mazatlan, Grayson.

“Common throughout the year in some peculiar localities.”

Fam. ARDEIDÆ.

249. *Ardea herodias* Linn.

“ “ Proc. Bost. Soc. of N. H., xiv., p. 285.

Mazatlan, Grayson, Bischoff; Tres Marias, Grayson.

“Common throughout the entire year.”

250. *Herodias egretta* (Gm.).

“ “ Proc. Bost. Soc. of N. H., xiv., p. 285.

Mazatlan, Grayson, Bischoff; Rio de Coahuana, Xantus; Tres Marias, Grayson.

“Common the entire year.”

251. *Garzetta candidissima* (Gm.).

“ “ Proc. Bost. Soc. of N. H., xiv., p. 285.

Mazatlan, Grayson, Bischoff; Rio de Coahuana, Colima, Xantus; Tres Marias, Grayson.

252. *Demiegretta leucoprymna* (Licht.).

Mazatlan, Grayson, Bischoff; Manzanilla Bay, Xantus.

“Very common, and resident.”

253. *Demiegretta rufa* (Bodd.).

Mazatlan, Grayson.

“Not an abundant species in this locality, but resident at all seasons.”

254. *Florida cærulea* (Linn.).

Mazatlan, Grayson.

255. *Ardetta exilis* (Linn.).

Mazatlan, Grayson.

“Not common; specimen shot in September. I have also seen it near San Blas in November.”

256. *Butorides virescens* (Linn.).

Mazatlan, Grayson; Colima, Manzanilla Bay, Xantus.

“Common at all seasons.”

257. *Botaurus minor* (Gm.).

Mazatlan, Grayson.

“I have shot individuals of this species in the months of October, December and March; I am not certain of its being a summer resident as well.”

258. *Tigrisoma cabanisi* Heine.

Botaurus " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 357.

Mazatlan, Grayson.

"This fine species may be met with at all seasons about the lagoons."

259. *Nyctiardea naevia* (Bodd.).

Mazatlan, Grayson; Rio de Coahuana, Xantus.

"Resident, but not abundant."

260. *Nyctherodius violaceus* (Linn.).

" " Proc. Bost. Soc. of N. H., xiv., pp. 285, 301.

Mazatlan, Grayson, Bischoff; Rio de Coahuana, Xantus; Tres Marias, Socorro, Grayson.

"Quite numerous and resident; it appears to be widely distributed throughout Mexico. It feeds chiefly upon small fish, water reptiles and crabs, for which it hunts in the night. I have, however, seen the young of the year seeking for food during the day, but the habits of the species are mainly nocturnal, and very much resemble those of the common Night Heron; it is perhaps a little less solitary, as I have often found them associating in small communities."

Fam. GRUIDÆ.

261. *Gris canadensis* Linn.

Mazatlan, Grayson.

"Make their appearance in this locality as early as the month of September, in considerable numbers, but disappear before the end of March."

Fam. RALLIDÆ.

262. *Rallus virginianus* Linn.

Mazatlan, Grayson.

"Arrives in the latter part of October, disappears in the spring; not abundant."

263. *Rallus elegans* Aud.

Mazatlan, Grayson.

264. *Aramides axillaris* Lawr.

Mazatlan, Grayson.

"The Mangrove Rail, as its name indicates, inhabits, we may say, almost exclusively the darkest recesses of the mangrove swamps, that skirt the numerous esteros, putting out from the seacoast in tropical regions. These small arms of the sea sometimes extend far inland, and often end in lakes; they are invariably fringed with the mangrove, and the immense numbers of their roots form impenetrable brakes that defy the entrance into their gloomy shades, either to the hunter or his dog.

"The first bird of this species that I was able to procure I shot in December, 1866, near San Blas. I was coming down from Los Chillos in a canoe paddled by an Indian lad; it was a little after sunrise, and we were quietly 'hugging' the dense mangrove forest that lined the narrow estero on either side, whilst other large trees over-arched the stream in many places. I was on the lookout, with my gun ready, for whatever bird might present itself suitable for my collection; I suddenly beheld something running along upon the muddy shore; beneath the shadow of the mangroves it ever and anon stopped for a moment, and went through certain curious evolutions of jerking up its short tail. I fired and killed it, but being very near, the specimen

was much injured; it proved to be very interesting as a bird hitherto unknown to me. Doubtless it will prove to be a new species in the ornithology of the country.

"Another specimen, a fine adult male, was shot by my son in April, 1867, in the mangroves that border the estero near Mazatlan; it is now in my cabinet. I examined the stomachs of both birds, in which I found small crabs and diminutive mollusca only. During the months of April and May I have, when encamped near the mangroves, heard this bird's chattering or cackling notes at different hours of the night. I had frequently heard them long before I was able to see one, and that only in the silent hours of a moonlight night. It is a constant resident of Western Mexico, and does not appear to migrate."

I was much surprised to find this species from a locality so far north, and where it is stated to be resident. Mr. Sclater (P. Z. S., 1868, p. 449) records a specimen from Belize, Honduras.

From its habits it would appear to be seldom obtained, Col. Grayson procuring but two, and considering it an undescribed species; the specimen from Mazatlan does not differ from the type which came from Venezuela.

265. *Porzana carolina* (Linn.).
Mazatlan, Grayson.

"A few seen, and specimens procured in March, 1868; found in marsh grass at Mazatlan."

266. *Porphyrio martinica* (Linn.).
Rio de Coahuana, Xantus.

267. *Gallinula galeata* Licht.
Mazatlan, Tepic, Grayson.

"Common in the winter months, arrives in November in considerable numbers. I found it breeding near Tepic, in a lagoon, in which were several pairs, together with grebes and some other water-fowl; this was in May and June."

268. *Fulica americana* Gm.
Colima, Xantus; Mazatlan, Grayson.

"Very abundant from October to May. A few breed here in summer."

Fam. PARRIDÆ.

269. *Parra gymnostoma* Wagl.
" " Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 363.

Mazatlan, Grayson; Manzanilla Bay, Zacatula River, Rio de Coahuana, Xantus.

"Quite abundant in all lagoons where water plants cover the surface of the water, upon which they walk. A constant resident, and well distributed throughout the *tierra caliente*.

"I found the nest of this bird about the middle of June, in a lagoon near Tepic; it was placed upon the prostrate branch of a tree, just touching the water, in rather an exposed position, as there seemed to be no attempt at concealment. The nest is large and well formed, of coarse grass and water-moss, deep and rounded; the eggs, three in number, were fresh, of an oval form, with reddish blotches at the larger end, the shell very thin."

Fam. ANATIDÆ.

270. *Anser gambelii* Hartl.

Mazatlan, Grayson.

"From the month of September until February in considerable flocks; appear to migrate up and down the southern gulf shores."

271. *Bernicla canadensis* var. *occidentalis* Baird.

Durango, Grayson.

"I met with this species in flocks, on the road to Durango, between the Sierra Madre mountains and the city of Durango, in the months of February and March. But I have never seen or heard of one west of the Cordilleras in this locality."

272. *Dendrocygna fulva* (Gm.).

Mazatlan, Grayson.

"There are two species of this remarkable genus found in Western Mexico, considerably resembling each other in their general appearance, as well as in their natural habits. They are both natives of the Tropics, and are quite abundant in Western Mexico, as far north as Sonora. Our present species being the most numerous in this locality, I will first treat of.

"At the conclusion of the rainy season, or the month of October, they make their appearance in the vicinity of Mazatlan, San Blas, and southward, in large flocks; inhabiting the fresh water ponds and lakes in the coast region, or *tierra caliente*, during the entire winter, or dry months, subsisting principally upon the seeds of grass and weeds, and often at night visiting the corn-fields for grain. During these months I have found them in the shallow grass-grown ponds in very large numbers, affording excellent sport to the hunter, and a delicious game for the table; their flesh is white, juicy, and feeding upon grain and seed, is free from the strong or rank flavor of most other ducks; they are rather heavy or bulky, and usually fat. They are more easy to approach than our northern species; I have shot as many as fifteen with the two discharges of my double-barrel. When only winged they are almost sure to make their escape, which their long and stout legs enables them to do, running and springing with extraordinary agility, and ultimately eluding pursuit by dodging into the grass, or nearest thicket; if the water is deep they dive, and as they rise to breathe, having only the head above water, and that concealed among the water plants, they are soon abandoned by the hunter.

"Although its geographical range is confined within the limits of the Tropics, yet this species has its seasons of periodical migrations from one part of the country to the other; during the month of April their well-known and peculiar whistle may be heard nightly as they are passing over Mazatlan in apparently large flocks, going northward. At first this phenomenon puzzled me not a little, as I well knew that they are not often found far north of the Tropics, except an occasional straggler. But I was at length enlightened as to their point of destination; by frequent enquiries of the natives, I was satisfied that they went no farther north than the Mayo and Yaqui Rivers, in Sonora, and the adjacent lakes and lagoons, where they breed. Some, however, remain and breed in the State of Sinaloa, and the adjoining localities. I found young broods near San Blas that were unable yet to fly as late as the month of November. They doubtless rear two or more broods during the season. I never have been able to discover their nest, nor have I been satisfied as to whether they nest in hollow trees, as its near ally does, or whether it forms a nest on the ground among the grass, which latter supposition, I have been informed by the natives, is the case; the natives also tell me they lay ten to fifteen pure white eggs. It inhabits the region near the seacoast, but is never met with in the sea, and very seldom in the estero or salt water lagoons, being entirely a fresh water duck."

273. *Dendrocygna autumnalis* (Linn.).

Mazatlan, Grayson, Bischoff.

"The habits of this species are so much like its preceding near ally (*D. fulva*) as to leave but little room for any additional remarks. It is, however, more nocturnal in pursuit of subsistence, visiting the dry corn-

fields during the night in great numbers, and committing considerable depredations upon the ripe corn; I have also met with them in the night time walking along the road, far from any water, picking up the grains of corn that had been dropped by the packers.

"It is more abundant in the vicinity of Mazatlan in the latter part of the dry season than its congener, but in the months of April and May they migrate during the night towards Sonora; many of them, however, remain and breed in this locality during the summer, as I have shot them in every month in the year. They breed in the hollows of large trees, and lay from twelve to fifteen eggs; the young are lowered to the ground one at a time in the mouth of the mother; after all are safely landed she then cautiously leads her young brood to the nearest water.

"This duck perches with facility on the branches of trees, and when in the corn-fields, upon the stalks, in order to reach the ears of corn. Large flocks of them spend the day on the bank of some secluded lagoon, densely bordered with woods or water-flats, also sitting among the branches of trees, not often feeding or stirring about during the day. When upon the wing they constantly utter their peculiar whistle of *Pe-che-che-né*, from which they have received their name from the natives. (The other species is called *Durado*.) I have noticed that this species seldom lights in deep water, always preferring the shallow edges, or the ground; the cause of this may be from the fear of the numerous alligators that usually infest the lagoons.

"When taken young, or the eggs hatched under the common barn-yard hen, they become very domestic without being confined; they are very watchful during the night, and, like the goose, give the alarm by their shrill whistle when any strange animal or person comes about the house. A lady of my acquaintance possessed a pair which she said were as good as the best watch dog; I also had a pair which were equally as vigilant, and very docile."

274. *Anas boschas* Linn.

Mazatlan, Grayson.

"Not abundant, and only met with in winter months."

275. *Anas obscura* Gm.

Tepic, Grayson.

"I shot many of this species near Tepic, but have not seen one in the vicinity of Mazatlan. They doubtless breed in the locality of Tepic, as I found them there in the month of June in pairs."

276. *Dafila acuta* (Linn.).

Mazatlan, Grayson; Coahuana, Xantus.

"Common throughout this region in winter months only."

277. *Nettion carolinensis* (Gm.).

Mazatlan, Grayson.

"Abundant from November to March."

278. *Querquedula discors* (Linn.).

Mazatlan, Grayson.

"A common species in this locality; a few remain throughout the summer."

279. *Querquedula cyanoptera* Vig.

Mazatlan, Grayson.

"A rather common species during the winter and spring months, but never abundant."

280. *Spatula clypeata* (Linn.).

Mazatlan, Grayson; Guayamas, Dr. Palmer.

"Very common from November to May."

281. *Chaulelasmus streperus* (Linn.).
Mazatlan, Grayson.

"Abundant from November until late in spring."

282. *Mareca americana* (Gm.).
Mazatlan, Grayson.

"This species is abundant from November until late in the spring."

283. *Aix sponsa* (Linn.).
Mazatlan, Col. Abert.

284. *Cairina moschata* (Linn.).
Mazatlan, Grayson; Rio Zacatula, Xantus.

"The wild Muscovy Duck is quite common in this locality throughout the year; breeds and perches in trees."

285. *Aythya vallisneria* (Wils.).
Mazatlan, Grayson.

"Not uncommon during the winter months."

286. *Aythya americana* Eyton.
Mazatlan, Grayson.

287. *Bucephala americana* (Bp.)
Mazatlan, Grayson.

"Common in the winter months."

In his notes Col. Grayson gives *B. barrovii* as found at Mazatlan, but not common; there is no specimen of it in his collection, and as it is strictly a northern species, I think it probable there was an error in its identification.

288. *Fulix marila* (Linn.).
Mazatlan, Grayson.

"Found in the winter months."

289. *Fulix affinis* Eyton.
Mazatlan, Grayson.

290. *Fulix collaris* (Don.).
Mazatlan, Grayson; Rio de Coahuana, Xantus.

291. *Erismatura rubida* (Wils.).
Mazatlan, Tepic, Grayson.

"But seldom seen in the vicinity of Mazatlan."

292. *Erismatura dominica* (Linn.).

Tepic, Grayson.

"I found this duck, or several pairs, about fifty in all, that frequented a small lake or lagoon near the city of Tepic in Jalisco, as late as the month of June. They were evidently desirous of breeding in that locality; the females shot by me showed enlarged ovaries. I have not met with this duck in the neighborhood of Mazatlan."

Fam. PELECANIDÆ.

293. *Pelecanus fuscus* Linn.

" " Proc. Bost. Soc. of N. H., XIV, p. 302.

Mazatlan, Grayson, Bischoff; Socorro, Grayson.

"Very abundant at all seasons."

294. *Pelecanus erythrorhynchus* Gm.

Mazatlan, Grayson.

"Occasionally seen in large flocks on Rio Mazatlan, but not resident; they do not remain long in this locality; seen in winter months."

Fam. SULIDÆ.

295. *Sula cyanops* Sundevall.

" " Proc. Bost. Soc. of N. H., XIV, p. 302.

Socorro, Grayson.

296. *Sula piscator* (Linn.).

" " Proc. Bost. Soc. of N. H., XIV, p. 302.

Mazatlan, Bischoff; Isabella Island, Grayson.

"This species breeds upon the ground near the sea beach, the nest containing usually two eggs, or young. The voice of the female is harsh, while that of the male is a shrill whistle. I never saw the male feeding the young, although he assists in incubation, and taking care of the young in the absence of the female. I found them in great numbers breeding upon the Island of Isabella, and in the latter part of April the nests contained nearly all young, or eggs ready to be hatched. One, and sometimes two, eggs in a nest, of a greenish white, and rough on the outside; inside of shell pale green. The nests were on the lower surface of the island, near the sea, many on the sea beach; the young are fed by inserting the bill down the old one's throat."

Fam. TACHYPETIDÆ.

297. *Tachypetes aquilus* Linn.

Mazatlan, Grayson, Bischoff.

"Breeds upon the Island of Isabella in large numbers; eggs, one in each nest, pure white, nearly the size of a goose egg."

Fam. GRACULIDÆ.

298. *Graculus mexicanus* Brandt.

Mazatlan, Grayson, Bischoff.

"Common at all seasons."

Fam. PLOTIDÆ.

299. *Plotus anhinga* Linn.

“ “ Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 362.

Mazatlan, Bischoff; Rio Mazatlan, Grayson.

“Common in the fresh water lagoons, Mazatlan River and Rio Santiago; numerous in the small river of Tepic, and Lake Chapula, near Guadalajara. In this region it is a constant resident, and builds its nest in trees, near, or over, fresh water-lagoons or streams.”

Fam. PHÆTHORNIDÆ.

300. *Phæton æthereus* Linn.

“ “ Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 362.

Coast of Michoacan, Xantus.

“Usually found far out at sea and in the Gulf of California. Breeds on the Island of Isabel, near San Blas.”

Fam. LARIDÆ.

301. *Larus delawarensis* Ord.

Mazatlan, Grayson.

“Common in winter months only.”

302. *Chroicocephalus atricilla* Linn.

Mazatlan, Grayson.

303. *Chroicocephalus franklinii* (Swains.).

Mazatlan, Grayson.

“Specimens procured in December; a few others were seen in that month, but it is not common in this locality.”

304. *Chroicocephalus philadelphia* (Ord.).

Mazatlan, Grayson.

“A few individuals were seen, and specimens procured, in a fresh-water lagoon near the sea-shore, March 27th, 1868. I have not seen one since.”

305. *Blasippus heermanni* (Cass.).

Mazatlan, Isabella Island, Grayson.

“Not common, specimens shot on the sea beach near Mazatlan, in February and March; a winter visitant.”

306. *Sterna galericulata* Licht.

“ “ Finsch, Abh. nat. Ver. zu Bremen, 1870, p. 359.

Mazatlan, Isabella Island, Grayson.

“Common throughout the winter months, and until the latter part of March, when they congregate on the beaches in large numbers, and in a short time disappear from this locality for their breeding grounds.”

307. *Sterna maxima* Bodd.

Mazatlan, Bischoff; Isabella Island, Grayson; Guayamas, Dr. Palmer.

A few of this species are seen in the summer months, but like *S. elegans*, they congregate into flocks in March, and soon depart for their breeding places."

308. *Sterna forsteri* Nutt.

Mazatlan, Grayson.

"This species is quite abundant along the shores and esteros from October until April."

309. *Sterna superciliaris* Vieill.

Manzanilla, Xantus.

310. *Haliplana fuliginosa* var. *crissalis* Baird.

" " Proc. Bost. Soc. of N. H., xiv., pp. 285, 301.

Tres Marias, Socorro, Grayson.

311. *Hydrochelidon fissipes* (Linn.).

Mazatlan, Grayson.

"Makes its appearance in this locality in September and October; remains all the winter months."

312. *Anous stolidus* (Linn.).

Isabella Island, Grayson.

"I found this species breeding in communities on the north end of the island, upon shelving rocks, beneath the overhanging cliffs, like mud swallows. There were a great many of them in this one particular locality, and when fired at they came down in swarms over the canoe, and circled around like swallows. The nests were placed close together, but inaccessible. I, however, managed to procure one egg; it is white, with scattering brownish blotches, more numerous on the larger end, and is oval in shape. I believe but one egg is found in each nest."

313. *Rhynchops nigra* Linn.

San Blas, Grayson; Zacatula River, Xantus.

"I have observed this species during the summer months, especially near San Blas. It is not numerous, and partly nocturnal."

Fam. PROCELLARIIDÆ.

There are no specimens of this family in any of the collections from Western Mexico; but two are named in Col. Grayson's list, viz.:

"Stormy Petrel (White rump)."

"Dusky Petrel — very common."

Their determination can only be arrived at by examples.

Fam. COLYMBIDÆ.

One species of this family is on Col. Grayson's list, from the Island of Isabella, viz.: "Guillemot." There being no specimen it cannot be determined.

Fam. PODICIPIDÆ.

314. *Podilymbus podiceps* (Linn.).

Manzanilla Bay, Xantus.

"A winter visitant, but not abundant."

315. *Podiceps auritus* var. *californicus* Heerm.

Guyamas, Dr. Palmer.

316. *Sylbeocychus dominicus* (Linn.).

Mazatlan, Grayson.

"An abundant and common species in all fresh water ponds of this locality and Tepic, the entire year."

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