

NOTES ON A COLLECTION OF  
BIRDS FROM BATAAN, LUZON,  
PHILIPPINE ISLANDS

E. THOMAS GILLIARD

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E. THOMAS GILLIARD  
*Assistant Curator, Department of Birds*

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## INTRODUCTION

WORLD WAR II halted construction of the habitat groups in the Whitney Memorial Hall, a project calling for the collecting and assembling of 18 comprehensive exhibits from far-flung localities in the Pacific basin. With cessation of hostilities this project—then in its tenth year—was immediately resumed. As a result, shortly following 17 months with the Army in the South Pacific, the author was instructed to visit Bataan and eastern New Guinea for the purpose of collecting two of the four groups needed to complete this hall, as well as to make collections of birds at each station. The bird skins obtained at the first of these stations comprise the basis of this report.

Preliminary arrangements negotiated through the United States Department of State by Dr. Robert Cushman Murphy in 1946–1947 resulted in the initial phase of this venture taking the form of a joint expedition of the American Museum of Natural History and the National Museum of the Philippines, a partnership which proved most satisfactory and mutually profitable.

By special arrangement with the National Museum of the Philippines, a venerable institution which suffered almost complete destruction during the reconquest of Manila and approximately total destruction of its important ornithological collections, the bird skins that we obtained are to be divided equally between our institutions following selection of specimens for exhibition in the Bataan habitat group.

I am very much indebted to Dr. Eduardo Quisumbing, Director of the National Museum of the Philippines, and to his assistant, Dr. Canuto G. Manuel, for innumerable acts of assistance while in the field. Among these were the assigning of two excellent collectors and two laborers to my party and the obtaining of all necessary permits.

On behalf of the American Museum and the National Museum I take pleasure in extending sincere thanks to the following individuals without whose warm and expeditious assistance our tasks would have been infinitely more difficult.

Our deepest gratitude goes to Professor and Mrs. Norberto de Ramos of the University of Santo Tomas who welcomed us into

their home for extended periods. Their many acts of liaison in advance of our arrival, often executed at personal cost, were of vital importance to the success of our expedition. Mr. Herminio R. Espino, Superintendent of the Lamao Agricultural Research Station, his assistant, Mr. José K. Santiago, and Mr. Michael Ramiroff, superintendent of a local company, aided us in many invaluable ways, as did Messrs. L. A. Garard, J. F. Perrine, W. G. Owens, C. V. Nardi, and S. Gang of the Pacific Oil Storage Corporation. Mr. Nardi participated in the climb to the summit of Mt. Bataan. Mr. Owens joined me on a number of day-long hunts which resulted in fine collections of birds. Mr. Herbert E. Warfel, Director of the United States Fish and Wildlife Service, Manila, and Capt. F. C. Ziesenhenné of the trawler "Theodore N. Gill" provided transportation to Lamao.

In company with my wife Margaret, who served admirably as artist, photographer, and botanical collector, and one laborer, Mr. Telesforo Oane, I reached the little coastal village of Lamao, Bataan, on November 10, at the outset of the cool dry season. Reconnoitering, selection and construction of base camp preceded active collecting which began on November 14 with the arrival of Messrs. Manuel Celestino, Arturo P. Castro, bird collectors, and Gregerio W. Edaña, botanist. Mr. Edaña collected for, and was exclusively supported by, the National Museum, but he actively aided the expedition in many ways.

On December 20 a six-by-six truck with two machine gun guards, provided by Lieut. Claro C. Bagalso of the Balanga Military Police, conveyed our specimens and collectors through the troubled province of Pampanga to Manila. Active collecting of group accessories and birds ceased on December 19. Our work thereafter was chiefly of a geographic and photographic nature. It was at this time that the climb to the summit of Mt. Bataan was made for the purpose of supplementing our collection of group background studies.

The collection placed aboard the military police vehicle consisted of 1070 bird skins which, with 17 collected after its departure, made a total of 1087, representing 148 species (bodies and eyes of most of the species collected were preserved); 64 species of botanical

group accessories in the form of some 1000 pressed, pickled, dried specimens; and Mr. Edaño's herbarium collection of some 400 species of flowering plants intended for the National Museum of the Philippines. Retained at base camp were 213 water color studies of botanical subjects, panoramas,

insects, and birds made by Margaret Gilliard. Previously shipped to Rochester, New York, were 720 35-millimeter and 32 4 by 5-inch kodachrome studies. One hundred and twenty 4 by 5-inch black and white studies had already been processed in Manila.

### ORNITHOLOGICAL HISTORY

The importance of the "long" series that we collected is evident in view of the fact that the American Museum had few adequately represented species from localities near Manila. This shortcoming is of particular pertinence because the great majority of Philippine birds described during the nineteenth century are based on types taken in the vicinity of Manila. Without topotypical series for comparison, it often had been impossible to solve important taxonomic and zoogeographical problems. Thus the very high incidence of near topotypes that we collected represents valuable additions to the scientific collections in the American Museum and important replacements for material destroyed during the burning of the National Museum of the Philippines. For example, the type and only known specimen of the Black-crowned Tree Babbler, *Stachyris nigrocapitata affinis*, described from a single male collected in 1904 on Mt. Mariveles, was burned in 1945. This rare bird, which had been hunted in vain by John T. Zimmer during three visits to the Mariveles region in the years 1914 to 1916, was taken on Mt. Mariveles by our party.

I have been able to unearth very little information concerning early Bataan collections and nothing at all relating to the nineteenth century.

Apparently the first recorded ornithological surveys were conducted during February and March of 1902. It was during this period that F. S. Bourns and Richard C. McGregor collected in the following widely separated localities on Bataan.

Bourns worked in the northeastern portion of the peninsula in the vicinity of Hermosa and Orani. Specifically, I have found only two references to specimens that he apparently collected: a specimen of the rare migrant *Anas clypeata* and one of *Phalacrocorax*

*carbo* taken on March 16 at Orani and on February 2 near Hermosa, respectively (McGregor, 1903, p. 5). The first was definitely collected by Bourns; the latter was presumably collected by him in view of the close proximity of the two localities and the similarity of dates. This collection, like those of McGregor and Celestino (to be mentioned below), was made for the Philippine Museum, later called the Bureau of Science and presently known as the National Museum of the Philippines. With the exception of specimens listed in the following letter from Dr. Manuel of the National Museum, dated May 12, 1949, all three collections were totally destroyed during the battle for the liberation of Manila in 1945.

"All the birds in the Bureau of Science Collection were burned except 100 which were taken to Japan during the occupation. Unfortunately, when the birds were returned the original labels were gone. The new labels bore only locality and other data were obviously eliminated. As our catalogues and accessions were also burned no reconstruction of data could be made. The following birds recovered from Japan were from Bataan:

- (1) *Pitta s. sordida*, ♀, Lamao, Bataan
- (2) *Coracina s. striata*, ♂, Limay, Bataan
- (3) *Sarcops c. calvus*, ♂, Limay, Bataan
- (4) *Sarcops c. calvus*, ♀, Mariveles, Bataan
- (5) *Chrysocolaptes l. haematribon*, ♂, Limay, Bataan
- (6) *Phaenicophaeus superciliosus*, ♀, Limay, Bataan
- (7) *Gallicolumba luzonica*, ♀, Lamao, Bataan

"From the appearance, there is reason to believe the skins were prepared by A. Celestino.

"Before the war, live Luzon bleeding hearts (*G. l. luzonica*) and red jungle fowls (*Gallus gallus*) snared in Bataan were exported abroad. Before the war I sent a few



skins to Dr. E. Stresemann for exchange. I do not remember whether any came from Bataan."

McGregor (1903, p. 3) referred briefly to a five weeks' collecting trip in the vicinity of Mariveles in extreme southern Bataan. I have been able to determine this much with regard to the collectors involved in this operation and the period of their work. Obviously McGregor was one of the permanent collectors because he wrote (1903, p. 9), "At Mariveles, Bataan, in February and March, I killed from the same flower bush two males of *C. [innyris] whiteheadi* and *C. sperata* . . ." Andres Celestino worked at Mariveles with McGregor, for the latter mentioned him (1907, p. 293) as one of the collectors. The exact dates bracketing the Mariveles survey are unknown to me, but McGregor provided a good idea of the period by referring to an example of *Parus elegans* (1907, p. 293) collected at Mariveles on February 18, 1902, and to a male of *Hypothymis coelestis* (1903, p. 10) taken in the same region on March 14.

Andres Celestino, assisted by a collector named Mariano Canton, returned to Bataan in 1904 to collect extensively in the Lamao region. The evidence for this statement is deduced from the following facts: (1) *Zosterornis affinis* (McGregor) = *Stachyris nigrocapitata affinis* is based on a male collected on December 3, 1904, by Celestino and Canton, and (2) we found a Negrito by the name of Whogo living in the forested region of the upper Lamao River Valley who remembered that a man named Celestino had collected birds there "many" years ago. This discovery came about when the Negrito recognized the last name of my collector, Manuel Celestino, son of McGregor's assistant.

John T. Zimmer was apparently the only collector to visit the peninsula between 1904 and the date of our visit. He made three brief trips to the Lamao region, December 30, 1914, to January 3, 1915, April 2-4, 1915, and January 23, 1916. Dr. Zimmer has kindly compiled here for publication a complete list of the specimens that he obtained. A few have been published by Zimmer before (1918, pp. 223-232). His Bataan collection, comprising 22 species, was purchased by Dr. Leonard C. Sanford who presented it to the American Museum of Natural History in 1931.

#### BIRDS COLLECTED BY J. T. ZIMMER IN THE LAMAO REGION OF BATAAN

The species collected by Zimmer that we failed to observe or collect are indicated by an asterisk.

*Turnix ocellata*, 1 ♀  
 \**Philinopus l. leclancheri*, 1 ♂  
 \**Philinopus o. occipitalis*, 1 ♀  
*Chalcophaps i. indica*, 1 ♀  
 \**Cuculus fugax pectoralis*, 2 ♂  
 \**Cuculus canorus telephonus*, 1 ♂  
 \**Eudynamis scolopacea mindanensis*, 1 ♂  
*Phaenicophaeus cumingi*, 1 ♀  
*Halcyon l. lindsayi*, 1 ♂  
*Eurystomus o. orientalis*, 1 ♀  
*Buceros h. hydrocorax*, 1 ♀  
*Mulleripicus f. funebris*, 1 ♀  
*Anthus h. hodgsoni*, 1 ♂  
*Pericrocotus roseus divaricatus*, 1 ♂  
*Copysychus l. luzoniensis*, 1 ♂  
*Monticola solitaria philippensis*, 1 ♂  
*Orthotomus atrogularis chloronotus*, 1 ♂  
*Pachycephala p. philippinensis*, 1 ♂  
*Sitta frontalis aenochlamys*, 1 ♂, 1 ♀  
*Zosterops nigrorum luzonica*, 1 ♂  
*Sarcops c. calvus*, 1 ♀  
*Oriolus albiloris*, 1 ♀

#### CONSERVATION

The forests of the Lamao region in which we did nearly all of our hunting comprise the Lamao Forest Reserve (i.e., the National Park, as it is called today) which was established in October, 1903, by the Government of the Philippine Islands ostensibly as a permanent station for the study of problems relating to Philippine forests.

Merrill, in a comprehensive report (1906) on some of the flora found on the Reserve,

enumerated 611 genera and 1151 species and varieties. Whitford, after years of intensive field work, published a lengthy treatise (1906) on the vegetation of the Reserve, with particular emphasis on forest ecology and plant geography. His work is documented with 45 excellent photographs, many of which show the magnificent forest as it appeared during his day. Included also is a detailed map of the Reserve upon which Whitford indicated

six major ecological sectors occurring between the beach and the eastern summits of Mt. Bataan.

Having made a comprehensive survey of the same area, even to the extent of selecting several of the mountain camp sites used by Whitford, I find myself greatly saddened at the destruction which has been visited on this important laboratory forest in recent years.

Judging from an exchange of letters among the author, Mr. Richard H. Pough, Curator, Conservation and Use of Natural Resources, at the American Museum of Natural History, Mr. E. A. Demaray, Associate Director of the National Park Service, United States Department of the Interior, and officials of the United States Department of State at home and abroad, it is encouraging to note that the forests still standing on the old United States Military Reservation and on the Lamao Forest Reserve are now receiving protection.

In this connection, the following communication, dated March 25, 1949, from Mr. R. R. Ely, Chief of the Division of Philippine Affairs, Department of State, Washington, to Mr. E. A. Demaray is of particular interest:

"With further reference to my letter of March 2, 1949 concerning forest destruction on Bataan Peninsula, a report on this subject has now been received from the American Embassy in Manila. The following portions of this report may be of interest to you.

"The question of jurisdiction over the former military reservation on Bataan has not been finally concluded, but in its note to the Foreign Office of May 26, 1948 (a copy of which is enclosed) the Embassy requested that the Bureau of Forestry be authorized to administer the land in the interim. The current status of the forest was discussed with the Bureau of Forestry on March 9, 1949, at which time the information given below was obtained.

"On Bataan Peninsula there is a national park for which the Bureau of Forestry is permanently responsible and adjoining it is the former military reservation. Part of the military reservation was the scene of the battle of Bataan in 1942 and is expected to be reserved as a memorial area. Other parts

of the military reservation were not involved in the actual battle, so it may be that the final boundaries of the memorial park will differ from those of the prewar military reservation. The Bureau is intensely interested in the patriotic attributes of the area, but does not seem to concur in Mr. Pough's opinion that these particular forests are "the last surviving virgin or relatively undisturbed forests of Luzon Island." They were considerably disturbed by gunfire and were used to supply the needs of the military forces, whereas there are several areas in northern Luzon which the Bureau considers genuine virgin forest.

"Before the war there was an important lumbering industry in Bataan with a considerable number of sawmills in the nearby towns. The most important of these sawmills (e.g. Cadwallader) have not been rehabilitated, but the operators of smaller units and the laboring forces who depended upon the industry for their livelihood are still here. They have taken advantage of absence of Bureau of Forestry regulation and have conducted extensive illegal forestry operations to feed the nearby sawmills. Most of the damage has been done by small parties of men felling a few trees at a time and removing them by truck, usually at night. Once the logs arrived at the sawmills, it was impossible until recently to distinguish which ones had been obtained illegally.

"The Bureau of Forestry took over responsibility for the area in December 1948. It initiated its program of enforcement by concentrating a large number of inspectors borrowed from other areas and is still maintaining an exceptionally high staff. It has established check points along the roads for the inspection of all timber shipments. Enforcement is extremely difficult because there are dissident elements in the area and the wildcat timbermen are desperate and resourceful in the absence of any other source of income. The Bureau does not claim to have entirely eliminated illegal cutting but it may be assumed that the inspection service has reduced such activities to relatively few clandestine operations.' "

The lumbering operations alluded to apparently have brought about the near or complete extirpation of three species of birds

which until recently were common in the canopy of the original forest of the preserve, namely: *Ptilinopus l. leclancheri*, *P. o. occipitalis*, and *Eudynamis scolopacea mindanensis*. Zimmer (see Ornithological History) collected all three of these species despite the brevity of his visits to Bataan in 1914 to 1916. On the other hand, although we devoted more than 1000 man hours to collecting in the same region in 1947, we failed to find a trace of them.

The changes that have occurred in the forests of the Reserve since 1945 are infinitely greater than anything that had priorly happened there, including the three major battles of the recent war. It is true, however, that a great deal of the more accessible forest behind Lamao, including vast forested hills as far inland as 10 miles west of the coast, had been lumbered at least once prior to the war. An unusual terrain feature of the trail connecting Lamao with the upper Rio Salapo corroborated this statement. It consists of a very old wagon road which winds like a contour line along the northern flank of the Lamao River Valley. Although now completely overgrown, this road was used more than 50 years ago to move trees from the inner flanks of the Mariveles Mountains to the Lamao beach by Carabao cart. Portions of the outer third of this old road are bordered with grass fields, indicating either excessive cutting or farming.

The inner two-thirds, most of which lies above an altitude of 700 feet, is thickly bordered with mature second-growth forest interspersed with a relatively high incidence of original trees. This forest is now quite similar to the original forest through which it winds like a broad tape. In the original tropical forests growing along the edges of this tape post-war loggers have bulldozed an endless maze of roads. Equipped with powerful machines they drive almost anywhere they wish, and no forest giant is too large or too inaccessible to be cut and moved. Recently lumbered areas are denuded of almost all canopy, and forest fires are common. It is inevitable that much of the area will soon be cloaked permanently in fields of cogon and Talahib grass.

I observed very little evidence of war destruction to forests. Unlike many areas in the Pacific which were burned black with incendiary bombs in order to remove cover from the enemy, Bataan was not burned or heavily bombed. Even on Signal Hill behind Mariveles and on bitterly contested Zig Zag Pass between Subic and Pampanga bays, forest destruction is infinitesimal by comparison with that caused through the emergency post-war lumbering operations which were conducted first by the United States Army and later by independent interests.

## ECOLOGICAL SECTORS OF THE LAMAO REGION

About a thousand man hours of hunting, in the various habitats listed below, were required to obtain the 1087 study skins of 148 species listed in this paper. Percentage figures are given to indicate the approximate time devoted to each type of environment.

- 1% Bay edge: From 300 yards off shore to beach strip
- 2% Beach strip: In-shore rocks and exposed beach
- 1% Coastal mud flats: Brackish; inundated at high tide
- 3% Mangrove swamps: (*Rhizophora*) mud base; stilt roots
- 2% Coastal thickets: Low bushes, nipa palms (*Nipa fruticans*), vines; dry base
- 1% Protected tidal waters: Lamao River mouth and estuary

- 3% Fresh-water marshes: Rice paddies, stream-fed marshes
- 14% Lowland grasslands: Cogon and Talahib grass (*Imperata exaltata*, *Saccharum spontaneum*), flat and rolling "cogonales" up to 800 feet in the foothills
- 2% Native gardens: Hedges, cane fields, papaya groves, gourd arbors, banana plants
- 2% Native arbors: Open coastal orchards of guava, mango, and cashew trees
- 1% Rural communities: Principally about the barrio of Lamao
- 5% Bamboo thickets: Large, high, impenetrable clusters in swampy fields (*Bambusa blumeana*). Also mixed thickets: high narrow fencings of palms, bushes, bamboo, trees, etc., bordering braided streams in open lowland fields
- 10% Marginal woodlands: Thickly vined second-

- growth forest edge bordering agricultural and grazing areas. Canopy poor
- 18% High open woodlands (300 to 1800 feet): With a high incidence of original tropical forest trees interspersed among tall, second-growth dipterocarp trees. Canopy fairly high and thick. An open forest with good visibility; relatively few large lianas (*Ficus*) except on the original trees; numerous climbing vines (*Freycinetia*), and much slender climbing bamboo (*Dinoclora tjankorreh*); some needle palms. This is the most prevalent type of forest in the Lamao foothills
- 3% Woodland clearings: Cluttered with felled trees and burned stumps; partially overgrown with vines and cogon grass. Usually found above 800 feet in isolated areas that have been recently lumbered. This type of clearing is known as a "cainguin" in Tagalog
- 1% Boho forest (*Bambusa lumanpao*): One 25-acre patch consisting almost entirely of a large bamboo tree was found on the Lamao-Rio Salapo trail at an altitude of about 800 feet. Occasional original forest trees rose well above the bamboo which averaged a crown of some 30 feet. The forest grew in a semi-flat, dry valley and was littered below with decaying bamboo and papery leaves. (I find that this isolated forest is noted by George Richmond in a paper dealing with fibers suitable for paper making, 1906, Philippine Jour. Sci., vol. 1)
- 12% Original tropical forest (800 to 1600 feet). Canopy complete. Deeply shaded. Many great plank-buttressed trees, most of which are decorated with immense strangling *Ficus* growths; snarled with hanging epiphytic vines; creeping barbed rattan (*Calamus ornatus*), spiny palms, some climbing bamboo; many lianas lying on the ground; a few arboreal gardens of ferns and orchids on high limbs. This type of forest is rare in the Lamao Forest Reserve today. It occurs in patches in more inaccessible valleys and on ridges. Almost invariably the patches we found were being actively logged
- 2% Original tropical forest streams (up to 1600 feet): Canopy often complete. Rocks sparsely decorated with moss and white lichens; many trees with plank roots anchored on stream edges; much fallen debris and many animal bridges; usually bordered with embedded boulders; some earthen walls. In open, rocky areas interspersed with twisted small trees, a few tree ferns (*Alsophila contaminans*), and large ground ferns (*Dennstaedtia*)
- 14% Original high tropical forest (1600 to 2200 feet): Essentially similar to original tropical forest but canopy more open and forest more penetrable to man; rattan, thick-bodied climbing bamboo (*Dinoclora diffusa*), moss, lichens, animal trails, and boulders more abundant; strangled trees, twisted lianas, and ground vegetation less abundant, but the floor with a deeper covering of leaves; crown somewhat higher, perhaps 110 instead of 100 feet. At 1300 feet on Signal Hill we found a zone which apparently was above the range of mosquitoes and below the range of leeches (based on five man nights of sleeping on leaves without cover other than a blanket per man; leeches were common between 1600 feet and the moss forest). Mosquitoes did not range much above 1000 feet. A relatively rare type of forest in the Lamao region
- 2% Cloud forest (2200 to 3200 feet): Canopy very open; humidity high; trees small with a crown average of about 40 feet (level areas not examined) and well decorated with mosses, ferns, orchids, and lichens. Trees quite colorful, some having pure white trunks; short single-shafted palms with red berries and rubbery herbaceous plants fairly common; many bird's-nest ferns (*Asplenium nidus*), creeping ferns (*Numata repens*), some with leaves 3 feet long; holly-like bushes and rock begonias abundant. Many animal trails on ridges. Also Cloud Zone grass (3200 feet). An area of highland grass was found on Mt. Taquio. It was composed of a yellowish coarse grass 2 to 3 feet high through which were distributed a vine-like pitcher plant, a few rock ferns, and some shrubs with slender furry stems
- 1% Moss forest (4000 to 4700 feet): This area is apparently continuously saturated. Canopy very open. Trees twisted and dwarfed and appearing much heavier because of clinging vegetation; all arboreal surfaces thickly cloaked with waving "Spanish moss," epiphytic lichens, liverworts, ferns, and orchids. The floor of this forest is matted with moss, herbaceous plants growing 3 feet high, and orchids of at least 20 varieties, which range from adult plants 2 inches long to 3-foot plants sweeping downward from moss-covered trunks; many arboreal gardens appear far too

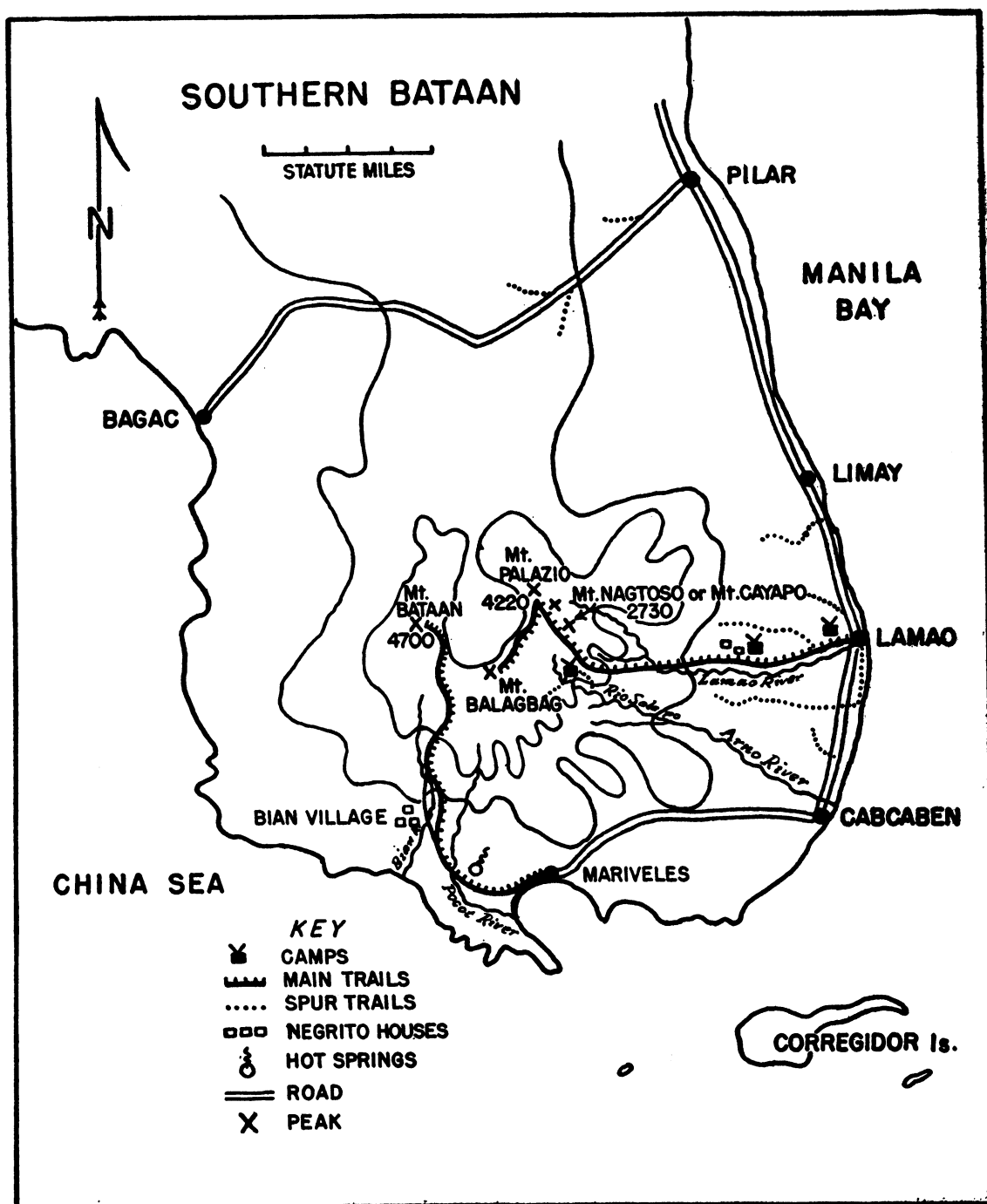


FIG. 1. Southern Bataan Peninsula, showing the location of collecting stations and trails.



heavy for the limbs supporting them; many limbs and moss-covered rocks are again encased with blue, gray, or white lichens. A number of high, rhododendron-like bushes with pinkish violet flowers (in late December) were observed; also brambles of red raspberries, the fruit of which is

edible but not very tasty, were observed several times in open areas. Deer and pig trails, diggings, and beds were observed on ridges (a boar was seen at 3400 feet and a four-prong deer antler was found at 3800 feet)

### COLLECTING STATIONS

**Base Camp:** Altitude about 25 feet. Situated in southeastern Bataan about a third of a mile inland from the barrio of Lamao on the western coast of Manila Bay, on the grounds of the Lamao Agricultural Research Station. Occupied by two to nine collectors and hunters during the period between November 10 and December 24. All lowland habitats up to an altitude of about 1800 feet were surveyed from this station, and a few collecting junkets were made along the Limay-Pilar-Bagac road. Among the specimens collected by natives which reached this camp were a number from southeastern Pampanga Province, notably from the vicinity of Lubao.

**Negrito Camp:** Altitude about 800 feet. Situated about 4 miles by trail west of base camp in the Lamao River Valley, in a clearing containing two Negrito huts in high open forest. Occupied by two collectors and two Negrito hunters during the period between November 29 and December 11. All forest habitats between the altitudes of 600 and 2500 feet were surveyed from this station.

**Rio Salapo Camp:** Altitude about 2100 feet. Situated about 12 miles by trail west of base camp on the east bank of the Rio Salapo<sup>1</sup> (a small tributary of the upper Arno River) on the site of an abandoned Negrito village called Anillano,<sup>1</sup> in semi-original, high tropical forest. Occupied by four collectors and two Negrito hunters during the period from December 11 to 16. Collecting forays were made into the cloud and moss forest from this station. It was from here that Mt. Cayapo (= Mt. Nagtoso),<sup>1</sup> 2730 feet; Mt. Taquio,<sup>1</sup> 3150 feet; Wild Pig Hill, 3450 feet; and Mt. Palazzo,<sup>1</sup> 4220 feet, were climbed. The wonderful panorama visible from the summit of Mt. Nagtoso was selected for the Bataan habitat group background. Mt. Balagbag,<sup>1</sup> 4455 feet, was climbed to an altitude of about 4000 feet (a reconnaissance was made to the summit of Mt. Bataan, the highest peak in the Mariveles region, by way of Cabcaben, Mariveles, Bian village [Negrito], and Signal Hill, December 21-22).

### GEOLOGICAL AND GEOGRAPHICAL NOTES

Although the summits of the many Mariveles mountains bear separate names, they are merely the high points of a single deeply eroded, ancient, volcanic cone marking the north headland of Manila Bay. The only sign of activity that we found consisted of a colorful hot spring located just south of the highest peak in the Mariveles complex. The following is a description of it from my field notes under the date of December 22, 1947:

"My guides took me to a hot spring which they called Balon Anito (Tagalog for Magic Well) which is located 40 yards north of Bian village-Mariveles barrio trail, 1000 yards north of the Pocot River and about 2 miles southwest of the barrio of Mariveles. The spring is in a long oval pool approximately 15 by 30 feet in diameter with a low, natural retaining wall surrounding it to a height of some 6 inches. On the eastern edge of this

wall a small notch drains the pool at a rate of perhaps a pint a minute. The water is deep yellowish green in color and pleasantly warm. Weak bubbling was noted in two small areas. Balon Anito is situated on the top of a mound some 20 feet high in a flat lowland field of cogon grass containing some patches of mixed second-growth forest. The lens-like mound is composed of a blackish, soft, rock-like substance. My Mariveles guides informed me that the spring did not fluctuate, that the water was of some medicinal value, and that the spring was deeper than the length of a long bamboo pole. They also mentioned certain local superstitions connected with the magic well."

A most interesting feature of the Lamao

<sup>1</sup> Names obtained from Whogo, "mayor" of the Mariveles Negritos, who served our party as guide and hunter.

region is the blackish colored beach in the vicinity of Lamao barrio which is largely composed of fine, hard, black sand. This sand is remarkably pure in the vicinity of several low headlands which protrude into Manila Bay just south of Lamao. Each is the terminal point of a long low ridge which extends westward into the flanks of the Mariveles Mountains. The Lamao River Valley lies between two such ridges.

Among the best known features of the Mariveles Mountains are great vertical scars

denuded the lateral walls sometimes to a depth of 100 feet. I found that the old slides appear pale gray because all earth has been washed from the underlying gray rock; the more recent slides are brown or pale brown, depending on their age.

Exposed rocks on the very summit of Mts. Nagtoso and Bataan are soft and grayish in color. They are easily crushed by hand.

The Rio Salapo-Mt. Balagbag rim trail is exceptionally beautiful and floristically rich. West of Mt. Taquio the terrain is nearly vir-

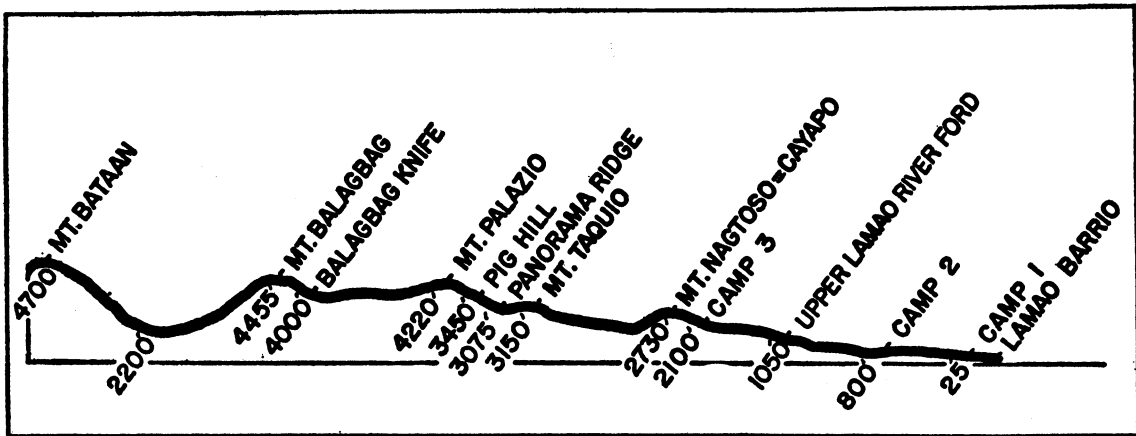


FIG. 2. Profile of east-west collecting trail extending between Lamao beach and its terminus near the summit of Mt. Balagbag. The approximate elevations of terrain between the latter and the summit of Mt. Bataan are given, although this peak was climbed from the south.

on the highest ridges which can be seen from afar. From the lowlands several are dull whitish in color, several are pale brown, and at least two are dark reddish brown. One appears to be a scrap slide at the mouth of a mine or similar excavation, and one seems to represent a man-made marker of some sort. A timber cruiser, with whom I discussed the scars prior to my travels in the mountains stated that the gray areas were caused by a "plant growth which covers exposed rocks." My investigations, which took me to the edge of four scars and within close proximity of several others, revealed that these terrain features marked the location of great natural slides on nearly vertical slopes. On the rim trail between Mt. Taquio and Mt. Balagbag one comes upon several areas where the old volcanic cone becomes very thin. These bare rock areas must be crossed with care, for each marks the top of a slide or slides which have

gin, and it is probable that the heavily forested highlands of Mt. Balagbag have not yet been visited by man. This promising highland collecting area can be reached across the top of a 30-foot knife ridge which is located at the junction of the rim trail and the eastern flank of the mountain. Judging from observations that I made at the knife ridge, from points in the southern lowlands and from the highlands of Mt. Bataan (which lies on the western side of Mt. Balagbag), I feel certain that the future collector will find it advantageous to continue westward on the rim from Mt. Balagbag to Mt. Bataan, and then to descend to the barrio of Mariveles.

The trail from Mariveles barrio to the summit of Mt. Bataan which leads generally northward from the lowlands is far less interesting and more barren than the east-west trail from Lamao. This appears to be due to its being more protected from prevailing winds.

## CLIMATOLOGY

In general, the weather in the Lamao region during the period from November 11 to December 23 was ideal for field operations. We found it agreeable at all times except during early afternoons when the temperature occasionally rose to 85° F. Ordinarily we slept under one blanket in the lowlands.

Little rain fell except during the out-season typhoons ("Flora" and "Dora") which threatened our encampments in middle and late November. I should judge that a total of 2 to 3 inches fell during November, most of it during the periods of high winds. In December about 2 inches fell.

The prevailing diurnal winds were from the west and northwest. Easterly winds brought showers and abnormal weather. Wind velocities, based on the Beaufort classification, averaged 4 to 7 miles per hour. Few periods of calm occurred. A velocity of 47 to 54 miles per hour was recorded the night of November 15.

Daily temperature observations were made at base camp and for a short period in the uplands.

Cloud cover was normally about .5; the forms that appeared most commonly were cirrus, cumulus, and altocumulus. Stratus clouds heralded the approach of the aforementioned typhoons.

	NUM- BER OF READ- INGS	TIME	TEMPERA- TURE, IN DEGREES FAHREN- HEIT
Base Camp	29	6:45 A.M.	68-77 (72.6)
(Nov. 11-	21	1:45 P.M.	73-85 (81.4)
Dec. 23)	32	5:45 P.M.	68-82 (77.4)
Rio Salapo	5	5:45 A.M.	66-68 (67.4)
Camp	4	5:45 P.M.	69-70 (69.2)
(Dec. 11-16, 2100 feet)			

It is interesting to note that two days after we broke camp on Bataan, typhoon "Jean," the worst to strike the city of Manila in 12 years, crossed directly over the spot where we had been encamped. The vortex of this storm was two hours in passing. Winds of more than 90 miles per hour were recorded, and great destruction resulted in Manila, including the partial unroofing of the home in which we were staying.

For many years a weather station was maintained at the Lamao Agricultural Research Station until its destruction by the invading Japanese. The present director, Mr. Herminio R. Espino, has new equipment on order, and he expects to reestablish the station in the near future.

## NOTES ON THE ZOOGEOGRAPHY OF LUZON

A study of the polytypic species of birds known to occur on Luzon, with special emphasis on the distribution of tropical forms, suggests the outlines of three zoogeographical subregions, one of which is very faint:

1. Northern and eastern Luzon south to the vicinity of Laguna de Bay
2. The Zambales-Mariveles region of western central Luzon (including Bataan)
3. Southern Luzon north to the isthmus between Tayabas and Lopez bays or to the region of Laguna de Bay

The northern and southern subregions, each of which is inhabited by 10 endemic races, are fairly well definable on the basis of racial boundaries and areas of known intermediacy. These boundaries occur most regularly in lowlands extending between Manila

Bay, Laguna de Bay, and Lamon Bay on the east coast of Luzon, and in the central valley linking Lingayen Gulf with Manila Bay.

The more or less intermediate Zambales-Mariveles subregion, with one endemic race, is of minor importance. It consists of the land lying west of the great central valley. Inasmuch as this region only recently became connected with Luzon through the filling of the gulf which formerly extended between Lingayen and Manila bays, it is somewhat surprising that the birds inhabiting it are not more distinct. Of the polytypic species known from this region a total of eight races were found which range to other subregions. Four are common to the northern subregion, and four occur in the southern subregion.

Only one species, *Nectarinia sperata*, was

found to have differing racial representatives in each of the three subregions.

Fourteen species with a combined total of 29 races show subspeciation on Luzon, the largest of the Philippine Islands. Mindanao,

which is but slightly smaller and which in Pleistocene times is thought to have consisted of five islands, has a total of 15 polytypic species which divide into approximately 31 races.

TABLE 1  
SPECIES POLYTYPIC ON LUZON

	North	West	South
<i>Rallus torquatus torquatus</i>	x	x	
<i>Rallus torquatus quisumbingi</i>			x
<i>Ptilinopus merilli faustinoi</i>	x		
<i>Ptilinopus merilli merilli</i>			x
<i>Ducula aenea nuchalis</i>	x		
<i>Ducula aenea chalybura</i>		x	x
<i>Collocalia esculenta isonota</i>	x		
<i>Collocalia esculenta marginata</i>			x
<i>Chrysocolaptes lucidus haematribon</i>	x	x	
<i>Chrysocolaptes lucidus ramosi</i>			x
<i>Mulleripicus funebris mayri</i>	x		
<i>Mulleripicus funebris fuliginosus</i>		x	x
<i>Turdus poliocephalus thomassoni</i>	x		
<i>Turdus poliocephalus mayonensis</i>			x
<i>Orthotomus atrogularis chloronotus</i>	x	x	
<i>Orthotomus atrogularis derbianus</i>			x
<i>Pachycephala whiteheadi albiventris</i>	x		
<i>Pachycephala whiteheadi crissalis</i>			x
<i>Sitta frontalis mesoleuce</i>	x		
<i>Sitta frontalis aenochlamys</i>		x	x
<i>Nectarinia sperata henkei</i>	x		
<i>Nectarinia sperata thereseae</i>		x	
<i>Nectarinia sperata sperata</i>			x
<i>Zosterops nigrorum aureilornis</i>	x		
<i>Zosterops nigrorum luzonica</i>			x
<i>Dicrurus balicassius abraensis</i>	x		
<i>Dicrurus balicassius balacassius</i>		x	x
<i>Oriolus chinensis chinensis</i>	x	x	
<i>Oriolus chinensis sorsogonensis</i>			x

#### NEW RACES AND EXTENSIONS OF RANGE

Although research directly connected with the working up of this Bataan collection has resulted in the discovery of seven new races of Philippine birds from other areas in the archipelago, only one new race was found in the Bataan collection itself, as follows: *Nectarinia sperata thereseae*, new subspecies.

The collecting of six Ijima Willow Warblers in the high tropical forests of Bataan on December 15, 1947, is interesting chiefly because it adds a new species to the known avifauna of the Philippines, as follows: *Phylloscopus coronatus ijimiae*.

## ANNOTATED LIST

THE NAMES OF COLORS have been capitalized when direct comparison has been made with Ridgway's "Color standards and color nomenclature."

### **Podiceps ruficollis philippensis** (Bonnaterre)

#### RED-THROATED GREBE

*Colymbus philippensis* BONNATERRE, 1790 (1791), Tableau encyclopédique et méthodique des trois règnes de la nature, vol. 1, p. 58 (fresh waters of the Philippines).

Near Lubao: One male, three (?).

Common on protected tidal and fresh waters. Our specimens are reported to have been taken on fish ponds.

Dr. N. de Ramos informs me that this species is present on Laguna de Bay throughout the year, but that there is a definite fluctuation in numbers indicating arrival and departure of migrants. During June to November flocks of 20 to 50 are frequent. At other periods of the year they are usually in groups of four or so. These flocks are usually abundant 60 to 100 yards out from marshlands bordering large rice paddies at the northeastern end of the bay. The species is comparatively rare off the western shores of Laguna de Bay, probably owing to man's interference.

### **Ardea cinerea rectirostris** Gould

#### GRAY HERON

*Ardea rectirostris* GOULD, 1843, Proc. Zool. Soc. London, July, p. 22 (New South Wales, error = India).

Near Lubao: One (?).

This straggler to the Philippines is reported to have been shot on the border of a fish pond.

### **Ardea purpurea manilensis** Meyen

#### PURPLE HERON

*Ardea purpurea* var. *manilensis* MEYEN, 1834, Nova Acta Acad. Caes. Leopoldino-Carolinae, vol. 16, p. 102 (Philippines).

Near Lubao: One (?).

Fairly common resident in mangroves, bordering protected tidal waters, inland marshes, fish ponds.

### **Egretta garzetta nigripes** (Temminck)

#### SNOWY EGRET

*Ardea nigripes* TEMMINCK, 1840, Manuel d'ornithologie, ed. 2, vol. 4, p. 376 ("L'Archipel des Indes" = Sunda Islands).

Near Lubao: Two (?), one female.

Reported to be common near Lubao. Unobserved on southern Bataan.

### **Bubulcus ibis coromandus** (Boddaert)

#### CATTLE HERON

*Cancroma coromandus* BODDAERT, 1783, Tables des planches enluminées d'histoire naturelle, p. 54 (Coromandel, ex Daubenton).

Lamao: Three males.

Resident of brackish and fresh-water marshes, flooded rice paddies, lowland grasslands, borders of fish ponds. Cattle herons are often to be seen roosting in flocks of up to 20 birds on low sentinel trees growing in brush rows. They are common around native houses and gardens where they often stand on the backs of grazing cattle.

PERISHABLE COLORS: Bill Yellow with a greenish wash on posterior half, a coral wash on medial dorsal portion of maxilla. Skin around eye Lemon Yellow. Legs and nails black.

### **Butorides striatus carcinophilus** Oberholser

#### LITTLE MANGROVE HERON

*Butorides striatus carcinophilus* OBERHOLSER, 1924, Jour. Washington Acad. Sci., vol. 14, p. 294 (Casiguran, Luzon, Philippine Islands).

Lamao: One male, three females.

Fairly common in coastal grass swamps, mangroves, and along the edges of protected tidal waters.

PERISHABLE COLORS: Bill black with a yellowish green wash. Iris Lemon Chrome. Skin around eye Bright Green. Legs Dark Ivy Green. Nails Buff Citrine.

### **Butorides striatus amurensis** (Schrenck)

#### ASIATIC MANGROVE HERON

*Ardea (Butorides) virescens* var. *amurensis* SCHRENCK, 1860, Reisen . . . im Amur-Lande, vol. 1, pt. 2, p. 441 (Amurland).



Foot of Mt. Cayapo: One male, December 12, 1947.

Migrant. Taken on the upper Lamao River (1000 feet) near the Rio Salapo trail ford. At this point the Lamao is a swift, narrow stream walled with high original forest. This specimen was the only heron observed on inland waters of Bataan.

***Nycticorax caledonicus manillensis* Vigors**

BLACK-CROWNED NIGHT HERON

*Nycticorax Manillensis* VIGORS, 1831, Proc. Zool. Soc. London, p. 98 (Manila, Philippine Islands).

Near Lubao: One (?).

Common resident of mangroves and low marginal woodlands bordering protected waters. This specimen is reported to have been taken on the edge of a fish pond.

***Ixobrychus sinensis astrologus* Wetmore**

CHINESE LEAST BITTERN

*Ixobrychus sinensis astrologus* WETMORE, 1918, Proc. Biol. Soc. Washington, vol. 31, p. 83 (Paete, Laguna, Luzon).

Lamao: One male; near Lubao: one female.

The male was taken in a low mangrove swamp.

***Ixobrychus cinnamomeus* (Gmelin)**

COMMON LEAST BITTERN

*Ardea cinnamomea* GMELIN, 1789, Systema naturae, vol. 1, pt. 2, p. 643 (China).

Lamao: One male; near Lubao: one female.

In the Lamao region an uncommon and thinly distributed resident in marshes bordering protected tidal waters, inland marshes, and borders of flooded rice paddies.

PERISHABLE COLORS: Maxilla black, becoming Light Green Yellow on sides of basal half, widest on subloral areas. A stripe from bill through lores black bordered narrowly above with Light Green Yellow; mandible Light Chalcedony Yellow, becoming black on cutting edges of basal half and on sides of basal third. Skin around eye, gape, Light Green Yellow. Lumiere Green shanks and knees, the toes and tarsi becoming Courage Green; nails brownish gray.

***Haliastur indus intermedius* Blyth**

BRAMINY KITE OR WHITE AND  
RED EAGLE-KITE

*Haliastur intermedius* BLYTH, 1865, Ibis, p. 28 (Java).

Lamao: One male, one female.

A very common resident. Often seen soaring above original jungle in the interior of Bataan but commonest over lowland coastal areas, particularly over the coastal strip in pairs. I once observed this species to land in Manila Bay about 100 yards off the coast in late November. It dipped frequently to within inches of the water, seemed to drag its feet, then settled on the water, gull-like, for several seconds.

On November 4 at 8:00 A.M. three Braminy Kites were observed soaring close to the water just inside the outer wall of the Manila breakwater. They appeared to be hunting floating carrion in the vicinity of a roadway cluttered with wrecked Japanese ships one-third to one-half mile from land. I was informed that fishermen detonate explosives in these sunken hulls.

PERISHABLE COLORS: Maxilla whitish, strongly washed with Pale Lumiere Green, becoming bone colored on cutting edges, with a basal band pale grayish blue (nearly Pale Russian Blue); mandible Pale Russian Blue washed with buff on outer third. Gape Pale Russian Blue. Cere pale Dull Green-Yellow; legs Naphthalene Yellow becoming Barium Yellow at junction of toes. Talons black. Iris a little brighter than Argus Brown.

***Accipiter soloënsis* (Horsfield)**

CHINESE HAWK

*Falco Soloënsis* HORSFIELD, 1821, Trans. Linnean Soc. London, pt. 1, vol. 13, p. 137 (Java).

Lamao: One male.

This rare transient was taken in a woodland clearing behind Lamao on November 19.

***Accipiter virgatus confusus* Hartert**

PHILIPPINE SPARROW HAWK

*Accipiter virgatus confusus* HARTERT, 1910, Novitates Zool., vol. 17, p. 209 (Laguna de Bai, Luzon).

Lamao: One male immature.

Found chiefly in open farming areas and rolling grasslands with spaced-out trees. Observed infrequently over the Lamao Agricultural Station.

Wing, 164.5 mm.; tail, 117.5.

PERISHABLE COLORS: Bill black, becoming greenish yellow on top of nostrils. Legs pale yellow, becoming Lemon Chrome on toes. Nails light gray at bases, becoming black at tips. Iris Lemon Chrome.

***Butastur indicus* (Gmelin)**

GRAY-FACED BUZZARD

*Falco indicus* GMELIN, 1788, *Systema naturae*, vol. 1, pt. 1, p. 264 (Java, *ex* Latham).

Lamao: Four males, one female.

This migrant from eastern Asia and Japan apparently arrived in numbers late in November. During the period from November 28 to December 3 four specimens were shot. A fifth was collected on December 17. All were taken in the open lowlands. Frequently observed perching on low stumps bordering rice paddies, open swamps, or sailing low over farm lands.

***Spizaetus philippensis* Gould**

PHILIPPINE HAWK EAGLE

*Spizaetus Philippensis* GOULD, 1863, *The birds of Asia*, pt. 15, in text to plate labeled *Spizaetus alboniger* (Philippines; Luzon, suggested as type locality by Swann, 1922, A synopsis of the accipiters, ed. 2, p. 121).

Lamao: One female.

"A rare forest eagle. . . ." Delacour and Mayr (1946, p. 46). Resident of high open woodlands where it was thrice observed in the early morning (probably the same bird) in December perched on midlimbs of giant trees. Food trees frequented by *Penelopides panini manillae*, *Buceros h. hydrocorax*, and *Ducula aenea chalybura* were always located near-by. Minutes before I shot this eagle from a perch 70 feet high a cock *Gallus* crossed a lumber trail about 100 yards distant. The eagle was apparently watching this prey.

Twenty minutes earlier, when first stalked, this Hawk Eagle flapped clumsily to a high tree farther up in the hill forest. There in full view of the hunter it sat stiffly, close over a

great limb which hid all but its upper chest and head, and permitted the hunter to stalk within small-bore range.

PERISHABLE COLORS: Bill black; naked portions of face, cere, soft parts at sides of mandible dark gray; a subterminal cere band dull grayish yellow. Toes pale whitish yellow; nails black. Iris a little more Apricot than Lemon Chrome.

***Circus aeruginosus spilonotus* Kaup**

MARSH HAWK

*Circus spilonotus* KAUP, 1847, *Isis*, col. 953 (Asia).

Lubao: Two males, one female; Lamao, one female.

Common winter resident. Frequently observed in lowland open areas, particularly over farm lands with marshy meadows or in the vicinity of rural communities. Often perches for long periods on low, exposed posts.

PERISHABLE COLORS: Bill black; dorsal surface of cere yellow, becoming green at sides of maxilla, gape, and base of mandible. Legs Lemon Yellow; nails black. Iris dull brownish white.

***Spilornis cheela holospilus* (Vigors)**

SERPENT EAGLE

*Buteo holospilus* VIGORS, 1831, *Proc. Zool. Soc. London*, p. 96 (near Manila, Luzon, Philippine Islands).

Lamao: One female, one (?).

According to Delacour and Mayr (1946, p. 50) this spectacular bird occurs "... in open country, along rivers, and in the forest." We found it the most common hawk of the Lamao hill forest (usually in pairs), but failed to observe it elsewhere. Its shrill, drawn-out whistle—*pheew, pheew*—is easily imitated and almost invariably will lure one or two birds within sight. On such occasions the birds respond quickly by soaring noisily close over the forest crown.

PERISHABLE COLORS: Facial disk and naked superciliaries Citron Yellow. Maxilla at base and mandible Puritan Gray; maxilla black except at base. Legs and feet Deep Colonial Buff; nails black. Iris Wax Yellow.

**Microhierax erythrogynys erythrogynys** (Vigors)

## PHILIPPINE FALCONET

*Hierax erythrogynys* VIGORS, 1831, Proc. Zool. Soc. London, p. 96 (island of Luzon).

Lamiao: Four males, five females.

Solitary during November and December but relatively common in the topmost branches of high, open forest, usually near woodland clearings. Also encountered on dead sentinel limbs of partition forest bordering swift, lowland streams. Occasionally seen on high isolated trees near water where one is likely to confuse it with *Arimus leucorhynchus*.

PERISHABLE COLORS: Bill black, with a thin gray line bordering cere. Skin around eye and lores dark grayish black. Legs slate; nails black. Iris dark chocolate brown.

**Falco peregrinus calidus** Latham

## PEREGRINE FALCON

*Falco calidus* LATHAM, 1790, Index ornithologicus, vol. 1, p. 41 (India).

Near Lubao: One female.

This rare migrant is reported to have been taken in open country near a fish pond.

PERISHABLE COLORS: Bill Gull Gray, becoming black at tip. Legs Citron Yellow; nails black. Iris bright blue.

**Gallus gallus gallus** (Linnaeus)

## WILD CHICKEN OR RED JUNGLE FOWL

*Phasianus gallus* LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 158 ("India orientali, Pouli condor etc." Restricted type locality, island of Pulo Condor, off the mouths of the Mekong).

Lamiao: Nine males, six females.

Very common in the grasslands and woodland clearings behind Lamiao. Local hunters informed me that wild chickens are more abundant on Bataan than in any other area within a day's drive of Manila. Introduced by early man.

PERISHABLE COLORS: Comb Dark Vinaceous. Subauricular spots grayish white. Maxilla brownish black with gray edges; mandible grayish white. Legs grayish; the frontal scutes Deep Gull Gray; spurs dark gray. Iris Cadmium Orange.

**Turnix ocellata** (Scopoli)

## SPOTTED OR OCELLATED BUTTON-QUAIL

*Oriolus ocellatus* SCOPOLI, 1786, Deliciae florae et faunae insubricae, fasc. 2, p. 88 (Luzon, ex Sonnerat, restricted to Manila by Hachisuka).

Lamiao: Three males, nine females.

A common, shy bird of rolling lowland grasslands. This species will flush when startled by a truck, fly 30 to 60 feet, and plunge into high grass. Despite persistent efforts we never succeeded in flushing it while on foot, even when a squad of hunters ran over the area where it had just been seen to land. We purchased all of our specimens from a native trapper.

PERISHABLE COLORS: Maxilla slaty black, becoming light gray on outer half; nostrils pale citrine gray; gape pale lemon yellow; mandible pale gray with a faint citrine wash at basal sides. Legs Strontian Yellow washed with gray at joints; toes whitish vinaceous gray. Skin on face grayish slate. Iris white.

**Rallus philippensis philippensis** Linnaeus

## BANDED RAIL

*Rallus philippensis* LINNAEUS, 1766, Systema naturae, ed. 12, vol. 1, p. 263 (Philippines).

Lamiao: One female.

Apparently a very uncommon bird of the lowlands. Our specimen was taken alive by a local trapper.

PERISHABLE COLORS: Bill dark reddish salmon, becoming dark vinaceous slate on outer half and along culmen. Legs pale bluish gray; nails pale gray. Iris bright Brazil Red.

**Rallus torquatus torquatus** Linnaeus

## BARRED RAIL

*Rallus torquatus* LINNAEUS, 1766, Systema naturae, ed. 12, vol. 1, p. 262 (Philippines; restricted to the vicinity of Manila by Gilliard, 1949, Auk, vol. 66, p. 275).

Lamiao: Four males, one female, one female (?), one (?).

Very common. Specimens were both trapped and shot. This species, *Amaurornis olivaceus*, and *Poliolimnas cinereus collingwoodi* were the only rails observed. *R. t. torquatus* was infrequently seen at dusk about the edges of wet meadows and fresh-water marshes, usually within 40 feet of tall, island-

like clumps of high bamboo. The many rail footprints seen around the muddy perimeters of these bamboo clumps and the occasional rail chatter heard from their midst indicate that this species dwells much of the time within these impenetrable mazes.

A small rufescent race from southern Luzon and a long-billed race with distinct head pattern from southern Zamboanga, Mindanao, have recently been named by Gilliard (1949, *Auk*, vol. 66, pp. 275, 276).

**PERISHABLE COLORS:** Bill black, becoming dull gray on ventral basal half. Legs dull brownish gray; nails brownish gray.

***Rallina eurizonoides eurizonoides* (Lafresnaye)**

**PHILIPPINE BANDED CRAKE**

*Gallinula eurizonoides* LAFRESNAYE, 1845, *Rev. Zool.*, p. 368 (no locality; the type agrees with specimens from the Philippines).

Lamao: One female adult, one female immature.

Both specimens were taken alive by a Filipino trapper in lowland woodlands near Lamao.

With nine specimens before me (four from vicinity of Manila, two from Mindanao, one from Basilan, and one from Sulu Islands), I find that a lone male from Maimbun, Sulu Islands, differs as follows: under tail coverts and bend of wing (under side) are strongly washed with tawny brown, not plain black and white as in all other specimens examined, including a subadult male from Basilan Island and an immature female from Lamao. Related races in the American Museum collections, regardless of age or sex, demonstrate no tendency towards the bright plumage of the Sulu bird which, I am confident, will prove to represent a distinct race when additional specimens are available.

***Poliolimnas cinereus collingwoodi* Mathews**

**WHITE-BROWED RAIL**

*Porzana cinerea ocularis* INGRAM, 1911, *Bull. Brit. Ornith. Club*, vol. 29, p. 22 (Philippine islands, *ex* G. R. Gray, 1844, *List of . . . birds in the . . . British Museum, Grallae, etc.*, p. 119, where a *nomen nudum*).

*Poliolimnas cinereus collingwoodi* MATHEWS, 1926, *Bull. Brit. Ornith. Club*, vol. 46, p. 60 (new name for *ocularis* Ingram, "preoccupied as a synonym of *cinereus* Vieillot").

Lamao: One male, one female.

Probably fairly common in habitat similar to that described for *Rallus t. torquatus*.

Except for somewhat brighter, more ochraceous under tail coverts in Lamao specimens, 14 skins from various localities in the Philippines between Luzon and Basilan Islands exhibit no appreciable variation.

**PERISHABLE COLORS:** Maxilla Citrine, washed with dull gray posterior to nostrils; mandible and cutting edges of maxilla Primuline Yellow, becoming faintly more grayish on outer third. Legs Serpentine Green, yellower at knees; nails same.

***Amaurionis olivaceus olivaceus* (Meyen)**

**PLAIN SWAMP-HEN**

*Gallinula olivacea* MEYEN, 1834, *Nova Acta Acad. Caes. Leopoldino-Carolinae*, vol. 16, suppl. 1, p. 109, pl. 20 (Manila).

Lamao: Five females.

Undoubtedly the most common rail on Bataan and certainly the most readily observed. At least 30 individuals were seen crossing the Limay-Mariveles road. Not infrequently two birds would follow each other across the path of an approaching vehicle. Such crossings were made in flat, open, lowland farming areas, dry fields interspersed with patches of second-growth forest, wooded areas in draws near small bridges, close to human habitations, and frequently in wooded areas bordering fresh-water marshes. However, all these crossings were made to and from the ever-present, high, dry grass which borders all coastal roads on Bataan. Several of these specimens were shot in the habitat described for *R. t. torquatus*. This rail is apparently at home in a wide variety of habitats. It is usually seen in the early morning or late evening.

**PERISHABLE COLORS:** Maxilla black washed with Yellowish Olive on outer third and on cutting edges; mandible Yellowish Olive. Legs Brownish Olive (specimen of December 1 with legs Olive Lake washed with mustard yellow on knees); Nails Brownish Olive. Iris a little redder than Morocco Red.

***Pluvialis dominica fulva* (Gmelin)**

**PACIFIC GOLDEN PLOVER**

*Charadrius fulvus* GMELIN, 1789, *Systema naturae*, vol. 1, pt. 2, p. 687 (Tahiti).

Lubao: Two males, one female; Lamao: one female, one (?).

A common winter visitor to the shores of Manila Bay. Our specimens were taken between the dates of December 11 and 22. Usually seen feeding alone on pebbly flats off the barrio of Lamao.

***Charadrius alexandrinus dealbatus* (Swinhoe)**

**KENTISH PLOVER**

*Aegialites dealbatus* SWINHOE, 1870, Proc. Zool. Soc. London, p. 138 (south coast of China, Formosa, Hainan).

Lamao: Three females November 20, 22, December 2; Pampanga coast: one male, one female, one (?), reported to have been shot on December 11.

Although Delacour and Mayr (1946, p. 70) describe this bird as an occasional visitor to the Philippines, we found it common along the western coast of Manila Bay during late November and early December. It was frequently observed feeding on exposed pebble flats near Lamao.

**PERISHABLE COLORS:** Bill black. Legs gray with fine, brown interscutal lines; feet blackish; toes black. Iris dark purplish brown.

***Tringa nebularia* (Gunnerus)**

**GREENSHANK**

*Scolopax nebularia* GUNNERUS, 1767, in Leem, Beskrivelse over Finmarkens Lapper, p. 251 (district of Trondhjem, Norway).

Pampanga coast: One (?).

Migrant. Reported to have been shot along the Pampanga coast, December 13.

***Tringa glareola* Linnaeus**

**WOOD SANDPIPER**

*Tringa Glareola* LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 149 (Europe; restricted type locality, Sweden).

Pampanga coast: One male, three females, one (?).

Migrant. Reported to have been shot along the Pampanga coast, December 11.

***Actitis hypoleucos* (Linnaeus)**

**COMMON SANDPIPER**

*Tringa Hypoleucos* LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 149 (Europe; restricted type locality, Sweden).

Lamao: Four males, November 20, 23, two-

December 1, one female, December 4, one (?), December 21.

Migrant. Very common on wet portions of the Lamao beach strip, on outlying rocks and tidal flats. Solitary or in small flocks of up to five.

**PERISHABLE COLORS:** Maxilla and anterior half of mandible black, posterior half of mandible dark gray. Legs dull gray with a yellowish citrine tinge at joints. Iris dark brown (December 1, iris dull grayish?)

***Gallinago megala* Swinhoe**

**MARSH SNIPE**

*Gallinago megala* SWINHOE, 1861, Ibis, p. 343 (between Takoo and Peking, China).

Lamao: Two males, November 16, one female, December 12, one (?), December 22.

A fairly common, secretive inhabitant of shallow, fresh-water marshes and flooded meadows, often in the midst of farm lands. Frequently solitary but occasionally encountered in small flocks of from two to five in the vicinity of the Lamao Agricultural Station grounds. When flushed this bird rises noisily, as does a woodcock, circles widely, and then often sneaks back to land 60 to 100 yards from where it was put up. Thus the hunter may stalk a single bird repeatedly. From the sportsman's viewpoint these field characteristics, in combination with the terrain preferred by the Marsh Snipe, make it by far the finest game bird on Bataan and perhaps in the Philippines.

***Ereunetes minutillus subminutus* (Middendorff)**

**LEAST SANDPIPER**

*Tringa subminuta* MIDDENDORFF, 1853, Reise in den äussersten Norden und Osten Sibiriens, vol. 2, pt. 2, p. 222, pl. 19, fig. 6 (western slopes of the Stanovoi Mountains and mouth of the Udá).

Pampanga coast: Four females, one (?), December 11, one female, December 12. Migrant.

***Chlidonias hybrida javanica* (Horsfield)**

**WHISKERED TERN**

*Sterna Javanica* HORSFIELD, 1821, Trans. Linnean Soc. London, pt. 1, vol. 13, p. 198 (Java).

Manila Bay: One (?), one female, Novem-



ber 23, three males, one female, December 8.

Migrant. Taken by a native hunter somewhere off the Lamao-Balanga coast of Bataan.

PERISHABLE COLORS: Bill black; legs dusky black.

***Thalasseus bergii cristatus* (Stephens)**

CRESTED TERN

*Sterna cristata* STEPHENS, 1826, in Shaw, General zoology, pt. 1, vol. 13, p. 146 (China and many of the southeastern islands of Asia; restricted type locality, China).

Outer Bay, vicinity of Lamao: Three males, three females, December 2.

Taken by a local hunter from a fishing boat. None was observed by our party.

PERISHABLE COLORS: Bill on inner half Wax Yellow, fading to Amber Yellow on outer half, with a bone white tip. Legs shining coal black; nails black, graying on ventral cutting edges. Gape like base of bill; iris dark vinaceous slate in sunlight; slate black in usual light.

***Treron pompadora axillaris* (Bonaparte)**

POMPADOUR GREEN PIGEON

*Osmotreron axillaris* BONAPARTE, 1857, *Conspectus generum avium*, vol. 2, p. 13 (locality unknown = Philippine Islands).

Lamao: Seven males, 10 females.

Very common. In flocks of up to 20 in isolated fruit trees of the open hill forest behind Lamao. A silent species of the middle and top tiers of the forest.

PERISHABLE COLORS: Hard parts of maxilla gray washed with Greenish Glauous on outer half, Pale Russian Blue on inner half; soft parts of maxilla (beginning abruptly just anterior to nostrils and extending to feathers) Apricot Orange. Eye ring very narrow Kildare Green. Skin around eye gray with a heavy wash of Pale Companula Blue on anterior and upper surfaces. Legs giving the impression of pale greenish gray (dorsal scutes washed with Etain Blue at joints, elsewhere with Dull Opaline Green); nails gray with slaty sides and tips. Smooth sides of legs Kildare Green. Iris Pale Blue Green of a silvery texture.

***Treron vernans vernans* (Linnaeus)**

PINK-NECKED GREEN PIGEON

*Columba vernans* LINNAEUS, 1771, *Mantissa*, p. 526 (Philippines).

Lamao: One male, one female.

Quite uncommon. In pairs. One specimen collected in tall bamboo near a small stream 200 yards from Manila Bay; the other was taken in the forested foothills.

PERISHABLE COLORS: Bill grayish, becoming slightly yellow at base. Legs red; nails grayish, becoming black at tip. Iris Thulite Pink.

***Phapitreron leucotis leucotis* (Temminck)**

WHITE-EARED BROWN FRUIT DOVE

*Columba leucotis* TEMMINCK, 1823, *Nouveau recueil de planches coloriées d'oiseaux*, no. 32, pl. 189 (Manila, Luzon, Philippine Islands).

Lamao: Eleven males, 13 females.

Very common in partition forest and open woodlands of the lowlands. Usually in pairs. Frequently encountered in shaded thickets bordering streams and in fruit trees of the Lamao Agricultural Station. Not uncommonly within 5 feet of the ground.

I note that Hachisuka's *mindorensis* (1930, p. 146) is relegated to the synonymy of *leucotis* by Peters (1937, p. 23). On the basis of the following it certainly appears to be worthy of recognition.

The freshly collected material which we obtained at Lamao, Bataan, may be considered nearly topotypical of Temminck's *leucotis*. This long series differs from two adult Mindoro skins before me by having upper surfaces of rectrices, upper back, and shoulders duller, less bright vinaceous brown, more olive brown. These differences are not due to age, because very old specimens at hand from central and northern Luzon match the Lamao series and differ from the Mindoro specimens as specified.

Hachisuka (*op. cit.*) stated that *mindorensis* differs from *leucotis* by "... more reddish tinge throughout body ... more purplish shine on back, tail and wing coverts"; also by having "chin and nape ... stronger dark brown."

The type of *mindorensis* (Bureau of



Photograph (taken during bombardment) of the Lamo River Valley from Manila Bay, showing the barrio of Lamo in foreground, the clearings of the Lamo Agricultural Research Station in center, and the forested foothills of the Mariveles Mountains in background. Nearly all the birds mentioned in this report were collected in the area encompassed by this photograph



Science, Manila, male, No. 4894, April 11, 1905, collected at Balete, Río Baco, Mindoro Island) was burned at Manila in 1945.

**PERISHABLE COLORS:** Bill black. Skin around eye duller than pale Payne's Gray. Legs bright Corinthian Purple; nails grayish brown; pads pallid brown. Iris grayish vinaceous.

**Phapitreron amethystina amethystina** Bonaparte  
AMETHYST BROWN FRUIT DOVE

*Phapitreron amethystina* BONAPARTE, 1857, *Conspectus generum avium*, vol. 2, p. 28 (Philippines).

Mt. Cayapo: One male; Lamao: one female.

Delacour and Mayr (1946, p. 83) write that this species "... is rather rare and more confined to true forests." I suspect that its apparent rareness is due to the fact that this species dwells in the comparatively inaccessible middle and top tiers of original tropical and subtropical forests where it is difficult to observe.

Comparing Lamao birds with all other American Museum specimens (two from Samar, five from Mt. Apo, Mindanao), I find the following minor differences: (1) Luzon and Samar males differ from Mindanao males by having darker, more rufous under tail coverts, less pallid brown with buff edges; (2) Samar and Mindanao specimens have the bill slightly longer and heavier.

Lamao: Two females.

Fairly common in the uppermost tier of tall original tropical and high tropical forest trees. Always in small flocks which "freeze" when approached. Once observed in company with *Penelopides panini manillae* near the sentinel perch where *Spizaetus philippensis* was shot.

**PERISHABLE COLORS:** Bill gray (Gull Gray), the soft parts of maxilla including nostrils and cere washed with dull olive gray. Skin around eye Gull Gray. A narrow eye ring Ox-blood Red. Legs a little more vinaceous than Lobelia Violet (near dark Hortense Violet); talons dark slate. Iris Ox-blood Red.

**Macropygia phasianella tenuirostris** Bonaparte  
SLENDER-BILLED CUCKOO DOVE

*Macropygia tenuirostris* "Gr." BONAPARTE, 1854, *Compt. Rendus Acad. Sci.*, Paris, vol. 39, p. 1111 (Philippines = vicinity of Manila, *ex* Temminck, 1821, *Nouveau recueil de planches coloriées d'oiseaux*, no. 17, pl. 100).

Lubao: One male; Lamao: one female, one (?).

A not uncommon, quiet resident of lowland partition and second-growth forest where it is usually encountered in the lower middle tier on exposed limbs.

**PERISHABLE COLORS:** Bill Vinaceous Brown, becoming lighter in nostril pits and on mandible; a slight slaty wash on outer half of

TABLE 2  
MEASUREMENTS, IN MILLIMETERS, OF *Phapitreron amethystina amethystina*

Locality	Specimens	Wing	Tail	Bill, Side	Bill from Base
Mariveles Mts.	1 ♂, 1 ♀	142-144.5	96-99.5	17.5-18	25-25
Samar	2 ♂, 1 ♀	138-147.5	96-103	19.5-20	26.5-28.5
Mt. Apo	2 ♂, 3 ♀	143.5-148	95-100	19-21.5	25.5-28

**PERISHABLE COLORS:** Bill black. Legs Rasalan Purple; nails blackish. Iris near Grenadine Red.

**Ducula aenea chalybura** (Bonaparte)

GREEN IMPERIAL PIGEON

*Carpophaga chalybura* BONAPARTE, 1854, *Compt. Rendus Acad. Sci.*, Paris, vol. 39, p. 1074 (Philippine Islands).

maxilla. Skin around eye Neutral Gray; feet a little darker than Dark Vinaceous Purple; nails dark gray. Iris Light Orange Yellow.

**Geopelia striata striata** (Linnaeus)

ZEBRA DOVE

*Columba striata* LINNAEUS, 1766, *Systema naturae*, ed. 12, vol. 1, p. 282 (East Indies; restricted type locality, Java).

Lamao: Twelve males, 15 females.

Very common in hot, sparsely vegetated areas, particularly on plowed fields, paths, roadways, and banks of sandy streams. Usually in flocks. Unobserved on the beach strip. One nest was found 10 feet up in an isolated, brush-like tree bordering a grass field near Lamao.

PERISHABLE COLORS: Legs with scutes Anthrocene Purple, soft margins Vinaceous Lilac; posterior parts Deep Purplish Vinaceous. Iris white with wide outer perimeters dark gray.

***Streptopelia bitorquata dusumieri* (Temminck)**

PHILIPPINE TURTLE DOVE

*Columba dusumieri* TEMMINCK, 1823, Nouveau recueil de planches coloriées d'oiseaux, no. 32, pl. 188 (vicinity of Manila, Luzon).

Lamao: Seven males, five females, one (?).

Very common, particularly in the orchards of the Lamao Agricultural Research Station where it is to be seen morning and evening feeding on the ground in pairs or small flocks, or perched on high dead limbs overlooking fields.

PERISHABLE COLORS: Bill dark slate gray; skin around eye pale bluish gray; gape narrowly vinaceous purple. Legs dull salmon; toes salmon, heavily washed with gray (a bit more purplish than Eugenia Red). Iris Salmon-Orange to orange on inner edges.

***Chalcophaps indica indica* (Linnaeus)**

GREEN-WINGED GROUND DOVE

*Columba indica* LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 164 (East Indies).

Mt. Cayapo: One male; Lamao, two males, six females.

Probably a common inhabitant of the floor and lowest tier of native gourd arbors, open woodlands, partition and hill forests. We found it between 50 and 2100 feet. Despite its flashing Quetzal-green upper parts, this bird usually flushes before being seen on its feeding grounds in damp, dead leaves of deeply shaded areas.

My first observation of this species was of a bird-in-hand which flew into my tent early on a hot afternoon in mid-November. This is

of interest because at the time the tent was pitched under a gourd arbor close to a number of inhabited buildings and 50 yards from a much-used road.

PERISHABLE COLORS: Bill salmon, becoming dull Magenta Purple on posterior half (from nostrils back). Lores and eye ring dark vinaceous purple; legs a little more purple than Eugenia Red, becoming brighter on tarsi; nails bone. Iris chocolate brown.

***Gallicolumba luzonica luzonica* (Scopoli)**

BLEEDING-HEART PIGEON, PUNALADA

*Columba Luzonica* SCOPOLI, 1786, Deliciae florum et faunae insubrica, fasc. 2, p. 94 (Luzon, ex Sonnerat).

Lamao: One female, 600 feet.

Very uncommon or rare in the eastern forests of the Mariveles Mountains. I did not observe this species but was shown the exact spot where our only specimen was taken: a vine-covered thicket on the bank of a little dark draw in heavy, fairly open, original hill forest. The bird had retreated into this thicket on foot. The rarity on Bataan of this remarkable endemic Philippine species may be due to extensive trapping in years past. The Bleeding-heart Pigeon has long been a popular cage bird in Europe and America.

PERISHABLE COLORS: Bill Deep Neutral Gray, somewhat lighter, more gray on outer half of maxilla and on ventral aspect of mandible; tips narrowly bone gray. Skin around eye Deep Neutral Gray. A very narrow Anthrocene Purple eye ring. Legs a little brighter than Deep Hellebore Red; talons pale bone gray. Iris Vinaceous Purple.

***Prioniturus luconensis* Steere**

GREEN-HEADED, RACKET-TAILED PARROT

*Prioniturus Luconensis* STEERE, 1890, A list of the birds . . . collected by the Steere expedition to the Philippines, p. 6 (Marinduque and Luzon).

Lamao: Four males, two females.

Fairly common in the canopy of original tropical forest. Unobserved by the author.

***Bolbopsittacus lunulatus lunulatus* (Scopoli)**

GUAIABERO

*Psittacus lunulatus* SCOPOLI, 1786, Deliciae florum et faunae insubrica, fasc. 2, p. 86 (Luzon, ex Sonnerat).



Lamiao: Five males, six females.

Common. Our specimens were taken from upper portions of spaced-out mango trees growing on pasture lands of the Lamiao lowlands.

PERISHABLE COLORS: Bill slate black, the posterior maxilla with pale gray sides (immatures have maxilla entirely pale gray); cere black. Legs gray, washed with cerulean blue. Iris dark brown.

***Loriculus philippensis philippensis***  
(P. L. S. Müller)

PHILIPPINE HANGING PARAKEET, COLASISI

*Psittacus philippensis* P. L. S. MÜLLER, 1776, *Natursystem*, suppl., p. 80 (Philippines, i.e., Luzon, ex Buffon).

Lamiao: Sixteen males, seven females, three (?).

Abundant in high bushes, vines, bamboo clumps, and fruit trees throughout the lowland farm lands. Also found in partition and second-growth forest edge, often in the vicinity of human habitations. Unobserved in high open and original tropical hill forest. Usually in small flocks. Most frequently found in the middle or top tiers of spaced-out fruit trees but not uncommon within 6 feet of the grass in shaded bushes growing on steep banks.

PERISHABLE COLORS: Bill a little more orange than Scarlet Red, with a yellowish brown tip. Feet Cadmium Orange; nails dark slate with black tips. Iris dark vinaceous brown.

***Cuculus sparverioides sparverioides* Vigors**

LARGE HAWK CUCKOO

*Cuculus sparverioides* VIGORS, 1831 (1832), *Proc. Zool. Soc. London*, vol. 1, p. 173 (Himalayas).

Lamiao: One male, one female, one (?).

An uncommon migrant. We found it in the lowlands where it frequented brush-like trees growing in cogon grass fields. Unlike other large cuckoos observed in the Lamiao region, this species does not take cover when approached, but flushes from bush to bush where it usually perches on high exposed branches. At such times it closely resembles

a female Cooper's Hawk despite its slenderness and more horizontal stance.

***Cacomantis variolosus sepulcralis* (S. Müller)**

RUFIOUS-BREASTED BRUSH CUCKOO

*Cuculus sepulcralis* S. MÜLLER, 1843, *Verhandl. Natuurl. Geschied. Nederlandsche, Land en Volkenk.*, pt. 6, p. 177, note (Java and Sumatra).

Lamiao: Two male immatures, two females, one (?).

Not uncommon along edges of second growth bordering lowland clearings. Delacour and Mayr (1946, p. 107) inadvertently omitted this race. It lives on most of the larger islands of the Philippines except Basilan and the Sulus which are inhabited by the race *everetti*.

PERISHABLE COLORS: Adult: Maxilla black, mandible lemon yellow with a black tip. Gape salmon. Eye ring bright lemon yellow. Legs bright lemon yellow; nails black. Iris dull brownish gray. Immature: Maxilla black; mandible pale orange with a black tip; gape yellow. Eye ring lemon yellow. Feet yellow with a greenish cast on dorsal surfaces. Iris dark brown.

***Chalcites xanthorhynchus amethystinus* (Vigors)**

VIOLET CUCKOO

*Lampromorpha amethystina* VIGORS, 1831, *Proc. Zool. Soc. London*, p. 98 (neighborhood of Manila, Luzon, Philippine Islands).

Lamiao: One male adult.

The only specimen encountered of this rare forest cuckoo was collected by Manuel Celestino deep within the Lamiao hill forest.

PERISHABLE COLORS: Outer halves of bill Salmon Orange; inner halves Grenadine Red, with fine dusky black tips; soft parts around nostrils, gape, eye ring Grenadine Red. Feet Blackish Brown. Iris English Red.

***Surniculus lugubris velutinus* Sharpe**

DRONGO CUCKOO

*Surniculus velutinus* SHARPE, 1877, *Trans. Linnean Soc. London*, ser. 2 (zool.), vol. 1, p. 320 (Malamaui, Philippines).

Lamiao: Two males, three females.

Fairly common in mixed bamboo and low,

second-growth trees bordering open woodland roads where it occasionally perches in the sun on exposed limbs 10 to 20 feet up. Also observed hopping about in brush close to the floor of original forest. Always solitary during November and December. The distinctive "white pants," which are usually visible when this species is perching, serve as an excellent field character.

**PERISHABLE COLORS:** Bill black; skin around eye dark bluish gray. Legs dark Gull Gray. Iris dark brownish black.

***Phaenicophaeus superciliosus* Dumont**

**ROUGH-CRESTED CUCKOO**

*Phaenicophaeus superciliosus* "Cuv." DUMONT, 1823, Dictionnaire des sciences naturelles, éd. Levrault, vol. 28, p. 45 (Philippines).

Lamiao: Seven males, five females.

Common. Observed a number of times in cogon grass interspersed with bushes. Always near the ground. When flushed this species will fly clumsily 30 to 50 feet close over bushes and grass, then dive headlong to the ground, and run.

**PERISHABLE COLORS:** Bill Light Lumiere Green with a small Brice Green tip. Legs Oil Green with much yellower toes; pads bright lemon. Iris Lemon Chrome.

***Phaenicophaeus cumingi* Fraser**

**SCALE-FEATHERED CUCKOO**

*Phaenicophaeus Cumingi* FRASER, 1839, Proc. Zool. Soc. London, p. 112 (Luzon, Philippine Islands).

Lamiao: Three males, three females.

Common in the lower portions of original tropical forest. Once observed perched 40 feet up in heavy vines bordering a lumber trail in broken original forest.

**PERISHABLE COLORS:** Bill a little more brown than Honey Yellow. Skin around eye and lores Carmine. Legs Slate; nails dull gray. Iris Mars Orange.

***Centropus viridis viridis* (Scopoli)**

**PHILIPPINE COUCAL**

*Cuculus viridis* SCOPOLI, 1786, Deliciae florae et faunae insubrica, fasc. 2, p. 89 (Antigua, Panay, Philippine Islands, ex Sonnerat).

Lamiao: Thirteen males, eight females, one (?).

During November and December a very common, secretive, and often solitary inhabitant of lowland grasslands, particularly those with spaced-out bushes, trees, and clumps of bamboo. Usually on or near the ground. When flushed, this species flies a short distance and then plunges into thick bushes or grass.

**PERISHABLE COLORS:** Bill pale Gull Gray, becoming blackish gray on posterior half of maxilla and on posterior sides of mandible. Skin around eye deep gull gray. Feet Slate Color. Iris Carmine.

***Centropus unirufus* (Cabanis and Heine)**

**RUFOUS COUCAL**

*Pyrhocentor unirufus* CABANIS AND HEINE, 1862-1863 (1863), Museum Heineanum, vol. 4, pt. 1, p. 118, note (Philippines, i.e., Luzon).

Mt. Cayapo: Two males, four females; Lamiao: four males, two females.

A fairly common, very retiring bird of the matted undergrowth of original hill forest thinly interlaced with climbing bamboo. Usually found on or near the ground but occasionally perches in small trees 10 to 15 feet up. During November and December always encountered in isolated pairs. When one of such a pair is shot, its mate will repeatedly call "kaow." This shrill, plaintive cry is emitted for about an hour as the surviving mate searches the undergrowth.

Delacour and Mayr (1946, p. 112) state that *C. unirufus* is a rare inhabitant of bamboo jungles. We did not find it in the true bamboo or boho jungles of Lamiao where it likely occurs, but in the environment described above this deceptively secretive bird is fairly common or perhaps even common.

**PERISHABLE COLORS:** Maxilla Turtle Green, mandible Lichen Green. Skin around eyes, face Deep Chrome. Legs Green-blue Slate; nails gray, becoming light at tips. Iris vinaceous rufous.

***Otus bakkamoena whiteheadi* (Ogilvie-Grant)**

**LUZON SCREECH OWL**

*Scops whiteheadi* OGILVIE-GRANT, 1895, Bull. Brit. Ornith. Club, vol. 4, p. 40 (mountains of Lepanto, northern Luzon).

Lamao: One (?).

Found dead at Lamao on the Balanga-Mariveles highway at a point where the road passes through farm and pasture lands bordering the coast. Total length, 296 mm.; wing, 191.5; tail, 100.5; culmen from base, 19.

Discovery of this specimen extends the known range of *O. t. whiteheadi* from the "... mountains of northern Luzon ..." (Delacour and Mayr, 1946, p. 115) to the lowlands of eastern Bataan in central Luzon.

**PERISHABLE COLORS:** Bill dull grayish slate (near Deep Mouse Gray) with a pale tip; nostrils and cere dull gray with a bone gray wash on posterior sides; mandible pale vinaceous gray with a bone gray tip. Feet Deep Vinaceous Gray; nails dark slaty black with pale gray posterior halves.

*Ninox scutulata japonica* (Temminck and Schlegel)

JAPANESE HAWK OWL

*Strix hirsuta japonica* TEMMINCK AND SCHLEGEL, 1874, in Siebold, Fauna Japonica, Aves, p. 29, pl. 9, B (Japan).

Lamao: One male.

This migrant is apparently not uncommon in winter in the semi-open pasture lands of the Lamao Agricultural Station.

**PERISHABLE COLORS:** Bill Pois Green; the maxilla with slate black sides and a bone yellow wash at tip; mandible with blackish cutting edges on outer half. Gape and cere a little brighter than bill, more Asphodel Green. Little areas of bare skin on face and lores dull grayish brown. A narrow black eye ring. Legs brighter than Primuline Yellow; outer two-thirds of nails black, inner third lightening to pale gray. Iris Lemon Chrome.

*Ninox philippensis philippensis* Bonaparte

PHILIPPINE BOOBOOK OWL

*Ninox philippensis* BONAPARTE, 1855, Compt. Rendus Acad. Sci., Paris, vol. 41, p. 655 (no locality = Philippine Islands by inference).

Lubao. Pampanga (data from native collector): One (?).

**PERISHABLE COLORS:** Bill near Grape Green, becoming citron yellow at tip. Legs

chrome, becoming lemon yellow on toes; nails dark gray. Iris Chrome Yellow.

*Caprimulgus indicus jotaka* Temminck and Schlegel

JAPANESE OR JUNGLE NIGHTJAR

*Caprimulgus jotaka* TEMMINCK AND SCHLEGEL, 1847, in Siebold, Fauna Japonica, Aves, p. 37, pl. 12, ♂, pl. 13, ♀ (Japan).

Lamao: One female, one (?).

An uncommon winter visitor. Our specimens were taken by jacklight on December 10 and 12 as they rested on plowed ground in the lowlands of the Lamao Agricultural Station. Apparently they had just arrived on Bataan, for none were observed priorly despite almost nightly excursions through the same area. According to Delacour and Mayr (1946, p. 123) there are "only a few records" of this migrant from the Philippines.

**PERISHABLE COLORS:** Bill black, becoming vinaceous gray on sides of mandible. Gape pale vinaceous gray. Feet dull reddish brown with grayish lineations; nails blackish. Iris reflect amber in jacklight.

*Eurostopodus macrotis macrotis* (Vigors)

PHILIPPINE EARED NIGHTJAR

*Caprimulgus macrotis* VIGORS, 1831, Proc. Zool. Soc. London, p. 97 (Manila).

Lamao: Two males, five females.

A common, rather mysterious species which was unobserved except in flight. Our specimens were taken from a single flock of 10 to 20 birds which appeared each calm evening over a large plowed field of about 4 acres near base camp.

The activities of this species are closely linked with fluctuations in weather, for whenever the prevailing easterly winds were blowing at dusk, the flock did not appear. Certain overcast, threatening conditions also kept them away.

The field in question is in a narrow valley enclosed to north and south by low, semi-wooded ridges. To the west are spaced-out mango trees, bamboo clumps, and partitions interspersed among small grass fields. At a distance of about a mile the valley tapers upward into heavily forested foothills of

the Mariveles Mountains. To the eastward the field is shielded from Manila Bay (500 yards distant) by a dense belt of tall bamboo interspersed with some nipa palm and mangrove trees. Being thus protected, moderate breezes from the bay were barely perceptible in the field, yet without fail, whenever a light easterly breeze was blowing, no nightjars appeared.

The diurnal resting place of this species was not discovered despite extensive jack-lighting and continuous foraging into every type of habitat in the immediate vicinity of the field. I suspect, however, that the birds dwelt somewhere in the aforementioned bamboo belt, possibly on the ground under large clumps which were so intertwined with spiked shoots as to be practically impenetrable.

I frequently went to the plowed field just before flight time. Invariably on calm evenings about 12 minutes after the sun had set the dusky sky would suddenly become alive with wheeling, erratically diving birds, flying one moment on the grass tops, the next 40 to 50 feet up (this was about maximum height), or within a few feet of me. After about 10 minutes all would suddenly disappear.

**PERISHABLE COLORS:** Bill flesh colored, with a black tip. Feet with dark brown scutes and vinaceous lineations.

***Collocalia vestita mearnsi* Oberholser**

**GRAY SWIFTLET**

*Collocalia fuciphaga mearnsi* OBERHOLSER, 1912, Proc. U. S. Natl. Mus., vol. 42, p. 12 (in key), p. 17 (Hights-in-the-Oaks, 7000 feet, near Paoay, Benquet, Luzon).

Lamiao: Three males, three females, two (?).

Under certain frequently occurring conditions abundant in the lowlands. Unobserved elsewhere. Delacour and Mayr (1946, p. 127) write that this species "... seems to prefer hills and mountains, but is apparently not entirely absent from the lowlands." I shot these specimens from tightly knit flocks which frequently visited little clearings and wooded corridors in orchard-like pasture lands of the Lamiao lowlands. This species was not observed in the uplands or moun-

tains where *C. e. marginata* alone was collected. However, these gregarious swiftlets, which were so frequently present in the semi-wooded lowlands in windy wet weather, were absent on hot, bright days. At such times they probably visited the cloud forests. It would seem therefore that the movements of this species are governed by fluctuations in wind, light, and humidity.

**PERISHABLE COLORS:** Bill black; legs black; nails black. Iris dark vinaceous brown.

***Collocalia esculenta marginata* Salvadori**

**GLOSSY SWIFTLET**

*Collocalia marginata* SALVADORI, 1882, Atti R. Accad. Sci. Torino, vol. 17, March, p. 448 (Cebu).

Lamiao: Five males, six females.

Common in small local colonies throughout the Lamiao forests. Many of the small, semi-isolated forest amphitheaters caused by fallen trees, etc. (particularly those on rounded ridges), are occupied by colonies of from five to 15 birds. Members of such colonies apparently do not stray from their small amphitheaters except under very unusual conditions or to flutter momentarily into the dark surrounding forest or over lateral valleys. They course back and forth, around and around, hour after hour, and I have never seen one at rest. Infrequently great numbers filter down to the flat open lowlands where they hunt in large wandering drones. This happens during or after severe storms.

**PERISHABLE COLORS:** Bill and feet black. Iris dark brown.

***Apus pacificus pacificus* (Latham)**

**WHITE-RUMPED SWIFT**

*Hirundo pacifica* LATHAM, 1801, Index ornithologicus, p. 58 (New Holland = New South Wales *apud* Mathews; the *terra typica* has been fixed as the vicinity of Vladivostock by Domaniewski).

Lamiao: One male, November 15.

Not uncommon. A hurricane was approaching when I took this specimen from a drone containing hundreds of swifts of several species. Numbers of White-rumped Swifts were observed on three occasions during the

last half of November. Delacour and Mayr (1946, p. 128) write, "Passes through the Philippines on migration to Australia and has been recorded from several of the islands."

**Hemiprocne comata major** (Hartert)

WHISKERED TREE SWIFT

*Macropteryx comata major* HARTERT, 1895, *Novitates Zool.*, vol. 2, p. 473 (Philippine Islands; type from Luzon).

Lamoo: Four males, three females.

Very uncommon. Found in a few small forest clearings, always in pairs, one pair to a clearing. This species seems to prefer burned areas in original open hill forest containing numbers of dead trees from which the birds hunt insects of the forest crown in flycatcher fashion.

PERISHABLE COLORS: Bill black; legs with anterior portions Black; pads on posterior portions Brownish Vinaceous; pads of toes buff. Iris dark brown.

**Harpactes ardens** (Temminck)

PHILIPPINE TROGON

*Trogon ardens* TEMMINCK, 1826, *Nouveau recueil de planches coloriées d'oiseaux*, no. 68, pl. 404 (Mindanao).

Mt. Cayapo: One male, one female; Lamoo, one male, one female.

A very uncommon, secretive inhabitant of the lower and middle tiers of small, densely thicketed valleys in original hill forest. Our specimens were taken between the altitudes of 700 and 2100 feet. Usually in isolated pairs.

PERISHABLE COLORS: Male, bill with outer half Deep Chrome, inner half at sides more grass green than Light Cress Green, fading to Kildare Green at junction with yellow outer half. Gape, lores, fleshy areas underlying feathers at base of mandible and at base of nostrils bright Commelina Blue. Legs Light Lavender-Blue; toes with sides like legs and tops dull Kronberg's Green; nails Lime Green with blackish sides on anterior pair. Iris dark brown.

**Halcyon lindsayi lindsayi** (Vigors)

SPOTTED WOOD KINGFISHER

*Dacelo Lindsayi* VIGORS, 1831, *Proc. Zool. Soc. London*, p. 97 (neighborhood of Manila, Philippine Islands).

Mt. Cayapo: One male, one female; Lamoo: one male.

Very uncommon or rare. Found in deep forest.

PERISHABLE COLORS: Maxilla black (outer third shot off); culmen apparently on outer four-fifths Apricot Yellow; mandible Apricot X Light Cadmium. Legs Light Yellow-Green, lower edges of frontal scutes of toes washed with Lemon Chrome; nails Buff Yellow, the longest strongly gray on sides. Gape like culmen. Skin around eye (chiefly in front and rear) dull brown with a cracked texture lending a straw-colored cast to protruding edges.

**Halcyon chloris collaris** (Scopoli)

WHITE-COLLARED KINGFISHER

*Alcedo collaris* SCOPOLI, 1786, *Deliciae florae et fauna insubricae*, fasc. 2, p. 90 (no locality = Philippine Islands, *ex* Sonnerat, *Voyage à la Nouvelle Guinée*, p. 67, pl. 33; restricted to Manila, Luzon, by Oberholser).

Lamoo: Three males, four females.

Fairly common along the beach strip where it frequently perches on overhanging roots, stakes, and on partly submerged boulders.

**Halcyon smyrnensis gularis** (Kuhl)

WHITE-THROATED KINGFISHER

*Alcedo Gularis* KÜHL, 1820, *Buffoni et Daubentoni figurarum avium coloratarum nomina systematica*, p. 4 (Madagascar, *ex* Temminck, *Nouveau recueil de planches coloriées d'oiseaux*, no. 232, error = Philippine Islands).

Lamoo: Ten males, four females, three (?).

The most abundant kingfisher in the Lamoo region. Found in semi-open lowlands in the vicinity of streams and swamps.

PERISHABLE COLORS: Bill brighter than Ox-blood Red, becoming Carmine at base. A narrow Scarlet eye ring, becoming invisible under feathers on posterior half. Feet Nopal Red with black nails.

***Alcedo atthis bengalensis* Gmelin**

## RIVER KINGFISHER

*Alcedo bengalensis* GMELIN, 1788, *Systema naturae*, vol. 1, pt. 1, p. 450 (Bengal).

Lamao: Two females, November 15, November 19; two males, November 20, 23; one female, December 10; one (?), December 21.

Common in lowland thickets, partition forest, and second-growth forest edge.

PERISHABLE COLORS: Maxilla black; nostrils faintly salmon; mandible a little more orange than Grenadine Red washed with dark gray near tip and at basal sides. Gape salmon; feet like mandible. Iris dark chocolate brown.

***Ceyx cyano-pectus cyano-pectus* Lafresnaye**

## DWARF RIVER KINGFISHER

*Ceyx cyano-pectus* LAFRESNAYE, 1840, *Rev. Zool.*, p. 33 (type locality unknown = Luzon by designation of Bangs, 1930, *Bull. Mus. Comp. Zool.*, vol. 70, p. 207).

Lamao: One female.

Shot from perch 2 feet up in a nipa clump growing in a lowland swamp bordered by bamboo forest.

PERISHABLE COLORS: Maxilla black; mandible Scarlet; legs Scarlet; nails Grenadine. Iris Burnt Sienna.

***Ceyx melanurus melanurus* (Kaup)**

## PHILIPPINE FOREST KINGFISHER

*Alcedo melanura* KAUP, 1848, *Verhandl. Naturhist. Ver. grossherzogthum Hessen, Darmstadt*, no. 2, p. 74 (Philippines).

Lamao: One (?).

Apparently a rare, secretive bird of the lowland forests.

PERISHABLE COLORS: Bill and legs Scarlet; nails orange scarlet.

***Merops viridis americanus* P. L. S. Müller**

## CHESTNUT-HEADED BEE-EATER

*Merops americanus* P. L. S. MÜLLER, 1776, *Natursystem*, suppl., p. 95 ("Isle de France," error = Philippines).

Lamao: Eight males, nine females, one (?).

Abundant throughout the open lowlands. Always in small flocks.

PERISHABLE COLORS: Bill black; feet dull brownish; nails black. Iris Spectrum Red.

***Merops superciliosus philippinus* Linnaeus**

## GREEN-HEADED BEE-EATER

*Merops philippinus* LINNAEUS, 1766, *Systema naturae*, ed. 12, vol. 1, errata at end of volume; name for *Merops* 5th sp., p. 183 (Philippines).

Lamao: Two males, November 29; one female, November 30; one female, December 14; one male, December 19.

Not uncommon in rolling open grass fields containing isolated clumps of bushes, small trees, and patches of second-growth forest. On November 29 a wave of not fewer than 50 birds was observed over rolling grass fields between Lamao and Limay. Apparently thinly distributed except during migrations.

PERISHABLE COLORS: Bill black; legs light brown, becoming dark on toes; nails black. Iris Spectrum Red.

***Eurystomus orientalis orientalis* (Linnaeus)**

## DOLLAR BIRD

*Coracias orientalis* LINNAEUS, 1766, *Systema naturae*, ed. 12, vol. 1, p. 159 ("India orientali" = Java, *apud* Stresemann).

Lamao: Three males, six females.

Thinly distributed but common. During November and December this species is apparently solitary. It inhabits the semi-open lowlands up to an altitude of about 1000 feet in the Lamao region. Dollar Birds habitually sit sphinx-like for long periods on high exposed perches.

PERISHABLE COLORS: Bill more orange than Grenadine Red; the maxilla with a black tip; the mandible with a small orange tip. Eye ring blackish brown. Naked lores dull brownish yellow. Feet more orange than Grenadine Red. Iris dark vinaceous brown.

***Buceros hydrocorax hydrocorax* Linnaeus**

## RUFIOUS HORNBILL OR CALAO

*Buceros Hydrocorax* LINNAEUS, 1766, *Systema naturae*, ed. 12, vol. 1, p. 153 (Moluccas, error = Philippines).

Mt. Cayapo: Two females, 2100 feet.

Fairly common in the topmost tier of original high tropical and subtropical forest. The harsh honking of this species is the loudest noise of the Bataan forests. Always in pairs. Soldiers have been known to dive for their foxholes at the approach of a Calao. The

thrashing flight of this bird can be heard at distances of at least 300 yards when the wind is right.

Negritos in the Mariveles Mountains consider this species and the Tarictic Hornbill their greatest delicacies. Soup made from the tough, strong meat is delicious. They use Japanese and American rifles picked up on inland battlefields to kill these birds after calling them within range by honking for long periods. If successful in killing one of a pair, the Negritos can usually take the mate.

***Penelopides panini manillae* (Boddaert)**

**TARICTIC HORNBILL**

*Buceros Manillae* BODDAERT, 1783, Tables des planches enluminées d'histoire naturelle, p. 54 (Manila, ex Daubenton).

Lamao forests: Five males, five females.

Common throughout the tropical forests of Bataan where it is usually encountered in small flocks in the crowns of fruit trees growing on ridges.

***Megalaema haemacephala haemacephala*  
(P. L. S. Müller)**

**CRIMSON-BREASTED BARBET**

*Bucco haemacephalus* P. L. S. MÜLLER, 1776, Natursystem, suppl., p. 88 (Philippine Islands; restricted to Lamao, Bataan, Luzon, by Gilliard, 1949, Auk, vol. 66, p. 277).

Lamao: Eleven males, three females.

Common throughout the lowlands. Equally at home in tropical forest, open agricultural areas with spaced-out trees, and in trees growing amidst human habitations. Many of our specimens were taken while feeding in a tall solitary fruit tree located amidst a congregation of thatched houses in the barrio of Lamao. Boys who lived in houses beneath the tree killed the barbets with crude sling-shots.

PERISHABLE COLORS: Bill black, becoming dark slate on gape, pale gray on gonys and sides of gonydeal angle. Legs a little darker scarlet than Coral Red; nails black. Iris Auburn.

***Dendrocopus maculatus validirostris* (Blyth)**

**PIGMY WOODPECKER**

*Picus validirostris* BLYTH, 1849, Catalogue of the birds in the Museum Asiatic Society, p. 64

(no locality; name for the bird described and referred to *P. nanus* Vigors by Blyth, Jour. Asiatic Soc. Bengal, vol. 14, p. 197).

Lamao hill forests: One female; Mt. Cayapo, six males, four females.

Thinly distributed but common, particularly in semi-lumbered open forests containing a high percentage of dead trees. Also frequent in trees of the forest edge. Found between the altitudes of 400 and 2100 feet. Once observed traveling in a flock of birds which included a Striped-headed Creeper (*Rhabdornis m. mystacalis*), several White-lored Orioles (*Oriolus albiloris*), a number of Black Graybirds (*Edolisoma c. caerulescens*), and several small, forest crown warblers (*Phylloscopus*).

PERISHABLE COLORS: Bill bluish gray, brighter at base, blackish at tip. Legs Krönberg's Green. Iris dark vinaceous brown.

***Chrysocolaptes lucidus haematribon* (Wagler)**

**CRIMSON-BACKED WOODPECKER**

*Picus Haematribon* WAGLER, 1827, Systema avium, Picus, sp. 95 (India? = Luzon; restricted to Lamao, Bataan, by Gilliard, 1949, Auk, vol. 66, p. 278).

Lamao forests: Six males, nine females, one female (?), one (?).

The most common woodpecker of the Lamao region. Found throughout the tropical forests between the altitudes of 700 and 2100 feet. Always in pairs whose attachment is very strong. This species is particularly fond of large living and dead trees of the open, semi-lumbered forest areas.

PERISHABLE COLORS: Bill deep greenish black, becoming slaty black on culmen. Skin around eye dull brownish gray. Legs dull greenish gray. Iris a little browner than Carmine.

***Mulleripicus funebris funebris* (Valenciennes)**

**SOOTY WOODPECKER**

*Picus funebris* VALENCIENNES, 1826, Dictionnaire des sciences naturelles, éd. Levrault, vol. 40, p. 179 (Philippine Islands; restricted to Mt. Maquiling, Laguna, Luzon, by Gilliard, 1949, Auk, vol. 66, p. 279).

Lamao forests: Four males, one male (?), two females.



Fairly common in the original high tropical forests and in burned forest clearings containing large dead trees. Always in pairs which constantly call back and forth as they move about, never far apart.

**PERISHABLE COLORS:** Bill bone white, becoming dull whitish gray on basal halves of mandible. Feet Gull Gray heavily marked with brownish gray scales (or dirt). Iris a little paler than Martius Yellow.

***Dryocopus javensis confusus* (Stresemann)**

**WHITE-BELLIED BLACK WOODPECKER**

*Thriponax javensis confusus* STRESEMANN, 1913, *Novitates Zool.*, vol. 20, p. 317 (in key), p. 318 (Mt. Arayat, Luzon).

Lamao forests: One male, one female, one (?).

Uncommon in high open forest where they frequent dead and dying trees, many of which have been killed by lumbering operations and fire. Always in pairs. Hunting birds were observed to work individual trees from their bases to lower crown limbs.

**PERISHABLE COLORS:** Bill grayish black; legs Gull Gray; nails same. Iris Baryta Yellow.

***Pitta erythrogaster erythrogaster* Temminck**

**RED-BREASTED PITTA**

*Pitta erythrogaster* TEMMINCK, 1823, *Nouveau recueil de planches coloriées d'oiseaux*, vol. 2, no. 36, pl. 212 (Manila).

Lamao: One male, one female.

Very uncommon and secretive. Our specimens were taken in the lowlands on the ground in thick, second-growth forest bordering the Lamao River.

**PERISHABLE COLORS:** Maxilla black with a faint orange wash on culmen, tip bone colored; mandible fleshy white, becoming pale grayish white on outer half, tip bone colored. Legs pale bluish gray with a vinaceous wash; nails bone white. Iris bluish slate.

***Alauda arvensis wattersi* Swinhoe**

**SKYLARK**

*Alauda wattersi* SWINHOE, 1871, *Proc. Zool. Soc. London*, p. 389 (South Formosa and the Pescadores).

Near Limay: Six males, November 23.

Common in plowed fields during migrations. Shortly after dawn on November 23 I collected six males from a flock of from 50 to 100 larks which were found feeding on the ground 15 miles north of Lamao. This is our only record of the species on Bataan. It is probable that this flock had recently arrived from Formosa or northern Luzon.

**PERISHABLE COLORS:** Maxilla black; mandible pale yellow, becoming black at tip. Legs Honey Yellow; nails dark brown. Iris dark brown.

***Hirundo tahitica javanica* Sparrman**

**PACIFIC SWALLOW**

*Hirundo javanica* SPARRMAN, 1789, *Museum Carlsonianum*, fasc. 4, pl. 100 (Java).

Lamao: Seven females.

Common in small colonies in the vicinity of human habitations. At the Lamao Agricultural Research Station six to eight birds were always to be seen in the immediate vicinity of the seed and machinery sheds.

***Hirundo rustica gutturalis* Scopoli**

**BARN SWALLOW**

*Hirundo gutturalis* SCOPOLI, 1786, *Deliciae florae et faunae insubricae*, fasc. 2, p. 96 ("In Nova Guinea," error = Panay, Philippines).

Lamao: Seven males, November 16, 17 (two), 28, 29, December 1, 12; three females, November 15, 23, December 10.

Common throughout our stay. These migrants were taken from exposed perches on the edge of Manila Bay. Also observed on wires over the barrio of Lamao. Always in small flocks.

***Motacilla cinerea caspica* (Gmelin)**

**GRAY WAGTAIL**

*Parus caspicus* GMELIN, 1774, *Reise durch Russland zur Untersuchung der drey Natur-Reiche*, vol. 3, p. 104, pl. 20, fig. 2 (Enzli, or Enseli, on southern coast of Caspian Sea).

Lamao region: Seven males, November 20, 21, 22, 28, 29 (three); four females, November 16, 21, December 1, 13.

Common along swiftly flowing streams where it perches on partly submerged rocks and on sand bars, generally within inches of the water. This active, nervous bird is usually

solitary, but occasionally it is found in small flocks. Taken between altitudes of 200 and 2100 feet along the courses of open and original forest streams.

**PERISHABLE COLORS:** Bill blackish brown, becoming bone gray on posterior half of mandible. Legs brown; nails dark brown. Iris dark brown.

***Anthus hodgsoni hodgsoni* Richmond**

**ORIENTAL TREE PIPIT**

*Anthus hodgsoni* RICHMOND, 1907, Publ. Carnegie Inst. Washington, no. 54, p. 493 (China). New name for *Anthus maculatus* Jerdon.

Lamao forests: Five males, November 30 (two), December 4 (two), December 13; three females, December 12, 15 (two); one (?), December 13.

Fairly common in the Lamao hill forest between the altitudes of 1000 and 2100 feet. This migrant from northeastern Asia apparently arrived on Bataan in late November, for we did not find a trace of it during the initial 20 days of hunting. Our specimens were shot from the midcrown limbs of original forest trees.

**PERISHABLE COLORS:** Maxilla brown with thin bone cutting edges, mandible vinaceous buff. Legs pale vinaceous brown; nails pale slate. Iris brown.

***Anthus novaeseelandiae lugubris* (Walden)**

**RICHARD'S PIPIT**

*Corydalla lugubris* WALDEN, 1877, Trans. Zool. Soc. London, vol. 9, p. 198 (Guimaras Island).

Pilar-Bagac Road: Four males, three females.

Abundant in flocks on sandy lowland roads 15 miles north of Lamao. Also found in plowed fields of that area. Not observed and probably absent from the immediate vicinity of Lamao where we expected the species to occur.

***Coracina striata striata* (Boddaert)**

**BARRED GRAYBIRD**

*Corvus striatus* BODDAERT, 1783, Tables des planches enluminées d'histoire naturelle, p. 38 (New Guinea, error = Luzon).

Lamao: Five males, four females.

Fairly common inhabitant of the original

hill forest above 800 feet. Usually in pairs in the middle and top forest tiers.

**PERISHABLE COLORS:** Bill and feet black. Iris Marguerite Yellow.

The race remains rather stable over most of Luzon, except in the extreme south portion where the following minor difference is observable.

Compared with a series of four Bataan females, five females from Sorsogon, southern Luzon, are darker below (more contrast between black and white abdominal barring), owing chiefly to the presence of broader black and narrower white barring. Males exhibit no differences, and in this connection it should be noted that I attribute the prominent black rump spots of Sorsogon males to subadulthood. This character appears sub-obsolete on two Bataan males. In completely adult males the rump is like the back but with fine grayish terminal edges. No appreciable difference in measurement was noted in the 35 Luzon specimens examined.

***Edolisoma caerulescens caerulescens* (Blyth)**

**BLACK GRAYBIRD**

*Ceblepyris caerulescens* BLYTH, 1842, Jour. Asiatic Soc. Bengal, vol. 11, p. 463 (Luzon).

Lamao: Eighteen males, one [male], 12 females, two (?).

Abundant in the original and open hill forest where it is most frequently encountered in the middle and top tiers of the forest. Always in open flocks of four to 16 birds. Often in company with other birds, notably *Rhabdornis m. mystacalis* and *Oriolus albiloris*. Unobserved above 2000 feet.

**PERISHABLE COLORS:** Bill and feet black. Iris dark vinaceous brown.

***Edolisoma morio elusum* McGregor**

**MOLUCCAN GRAYBIRD**

*Edolisoma elusum* MCGREGOR, 1905, Bureau Govt. Lab. Manila, no. 34, p. 19 (Balete, Rio Bacó, Mindoro).

Lamao: Five males, one [female].

"Rare," according to Delacour and Mayr (1946, p 166). This species is an uncommon resident in second-growth forest edge and partition forest of the Lamao lowlands.

The type, a male collected on May 17, 1905, was burned in the Bureau of Science building at Manila in 1945.

PERISHABLE COLORS: Bill, feet, and nails black. Iris dark vinaceous brown.

***Lalage nigra chilensis* (Meyen)**

PIED TRILLER

*Ceblepyris chilensis* MEYEN, 1834, Nova Acta Acad. Caes. Leopoldino-Carolinae, vol. 16 (suppl.), p. 74 (Chile, error = Philippines).

Lamiao: One female.

Although said to be "... common throughout the Philippines. ..." (Delacour and Mayr, 1946, p. 166), this bird is quite rare in the Lamiao region, at least during November and December. Our specimen was taken in the open lowlands.

***Lalage melanoleuca melanoleuca* (Blyth)**

BLACK AND WHITE TRILLER

*Pseudolalage melanoleuca* BLYTH, 1861, Jour. Asiatic Soc. Bengal, vol. 30, p. 97 (Luzon).

Lamiao: Four males, one male immature, one female.

Not uncommon in flocks in the middle and top tiers of original and second-growth hill forest. On November 26 I shot a Black and White Triller in original forest, 40 feet up. It was in company with others that were feeding in the forest crown at an altitude of 600 feet.

PERISHABLE COLORS: Bill and legs black. Iris dark vinaceous brown.

***Pericrocotus roseus divaricatus* (Raffles)**

ASHY MINIVET

*Lanius divaricatus* RAFFLES, 1822, Trans. Linnean Soc., London, vol. 13, p. 305 ("Found at Singapore; but it is also known in Sumatra").

Lamiao region: Seven males, November 15, 17, 22 (three), 25, 28; four females, November 17, 22 (two), December 2.

Common during the latter half of November. Usually in small flocks which travel through the crowns of trees growing in the open lowlands and along the edges of second-growth forest. It is probable that these migrants from eastern Asia and Japan move southward from the Lamiao region by early December. Delacour and Mayr (1946, p. 167) classify this species as a rare winter visitor.

PERISHABLE COLORS: Bill, legs, and nails black. Iris dark brown.

***Lanius cristatus lucionensis* Linnaeus**

BROWN SHRIKE

*Lanius lucionensis* LINNAEUS, 1766, Systema naturae, ed. 12, vol. 1, p. 135 (Luzon).

Lamiao: Eleven males, November 14 (two), 15, 16 (three), 18 (four), 23; eight females, November 14, 15 (two), 16, 18, 29, December 7, 9; three (?), November 15, 17, December 21.

This abundant, solitary species occurs in the open lowlands, the edge of second-growth forest, and in woodland clearings. It is fond of exposed perches 4 to 20 feet up in farm lands, grass fields, along narrow woodland roadways, in coastal grass swamps, and even in the vicinity of human habitations. Like the Dollar Bird (*Eurystomus o. orientalis*), this species sits motionless on exposed perches for long periods.

Although three races are recorded from the Philippines, we found only the most common, *L. c. lucionensis*, on Bataan during November and December.

PERISHABLE COLORS: Maxilla blackish, mandible and basal sides of maxilla pale gray. Legs pale blue gray, darker on frontal scutes. Iris dark maroon.

***Artamus leucorhynchus leucorhynchus* (Linnaeus)**

WHITE-BREASTED WOOD-SWALLOW

*Lanius leucorhynchus* LINNAEUS, 1771, Mantissa, p. 524 ("Manillis").

Lamiao: Ten males, 11 females, one (?).

Abundant throughout the open lowlands and common in hill forest clearings up to 1000 feet. Usually in colonies of from eight to 16 or more. Wood Swallows remind one of Purple Martins in method of flight and attachment of colonies to particular roosts. Of the many colonies scattered through the Lamiao region, three were within half a mile of base camp. Each occupied a definite area and utilized a specific section of limb for resting. One of these was 40 feet up in a thickly leafed pasture tree; another was on an exposed limb 70 feet above the Lamiao Bridge on the Manila-Mariveles Road; the third was 35 feet up on an outer limb of a dead shade tree standing amidst the noisy confusion of the Cadwallader Lumber Mill near the barrio of Lamiao.

At dusk colony members perch together

side by side and back to back in tight little knots which resemble a cluster of arboreal debris. If disturbed at late dusk, the colony readily explodes. After dark the birds sit tightly together and are hard to flush. By day Wood Swallows fly tirelessly for long periods or perch in varying numbers on crown limbs of high trees within their territory. When perching alone Wood Swallows may easily be mistaken for Falconets (*Microhierax erythrogenys*).

**PERISHABLE COLORS:** Bill blue with some black at tip. Legs and feet slate. Iris near Claret Brown.

***Irena cyanogastra cyanogastra* Vigors**

**FAIRY BLUEBIRD**

*Irena cyanogastra* VIGORS, 1831, Proc. Zool. Soc. London, p. 97 (Manila).

Lamao: One male, one female; Mt. Cayapo: three males, four females.

Not uncommon in the middle and top tiers of original high tropical forest where the species is always encountered in small noisy flocks. Our specimens were taken between 2000 and 3200 feet on heavily forested ridges.

**PERISHABLE COLORS:** Bill, feet, and toes black. Iris Garnet Brown X Nopal Brown.

***Pycnonotus urostictus urostictus* (Salvadori)**

**WATTLED BULBUL**

*Brachypus urostictus* SALVADORI, 1870, Atti R. Accad. Sci. Torino, vol. 5, p. 509 (type locality restricted to Luzon).

Lamao: One male.

Rare. Our only record is of a specimen collected on November 30 in the open lowlands.

**PERISHABLE COLORS:** Bill black, feet dark slate, eye ring wattle Primuline Yellow. Iris dark gray.

***Pycnonotus goiavier goiavier* (Scopoli)**

**YELLOW-VENTED BULBUL**

*Muscicapa goiavier* SCOPOLI, 1786, Deliciae florae et faunae insubricae, fasc. 2, p. 96 (Manila, ex Sonnerat).

Lamao: Fifteen males, eight females, one (?).

Abundant throughout the open lowlands from beach strip to forest edge. Probably the

best known indigenous land bird on Luzon. During November and December always found in small flocks in the tops of spaced-out scrub, tall grass and reed patches, and in a wide variety of bushes, plants, and open trees growing in native gardens. At the Lamao Agricultural Research Station Yellow-vented Bulbuls gathered like sparrows to feed on the ground amidst fermenting vegetation in an open, silo-like enclosure (see notes under *Microscelis g. gularis*).

**PERISHABLE COLORS:** Bill and feet black. Iris chocolate.

***Microscelis gularis gularis* (Pucheran)**

**PHILIPPINE BULBUL**

*Philedon gularis* PUCHERAN, 1855, Arch. Mus. d'Hist. Nat., vol. 7, p. 344, pl. 18 (China, error = Luzon).

Lamao forests: One male, one female; Mt. Cayapo: 19 males, seven females, two (?).

Abundant. This bulbul is the most common and widely distributed forest bird on Bataan. We found it from the forested lowlands to the upper limits of the high tropical jungle (3400 feet). It occurs most commonly in the lower (within 2 feet of the ground) and middle tiers, but several of our specimens were collected in the forest crown. A few were taken in thick lowland bamboo clumps and in second-growth forest edge along the Lamao River.

Apparently the life zones of the only two common Bataan bulbuls overlap very little if at all. This species is restricted to the forests. The Yellow-vented Bulbul (*Pycnonotus g. goiavier*) is found only in open country. Each is the most common and wide-ranging inhabitant of its life zone.

**PERISHABLE COLORS:** Bill black; feet gray. Iris maroon.

***Luscinia calliope* (Pallas)**

**RUBY-THROAT**

*Motacilla Calliope* PALLAS, 1776, Reise durch verschiedene Provinzen des Russischen Reichs, pt. 3, p. 697 ("... a Jenisea usque ad Lenam").

Lamao: One male, November 23, one female, December 2.

This winter visitor from northeastern Asia was quite uncommon in the Lamao region during the period of our survey. Our speci-

mens were taken in the semi-open lowlands.

**PERISHABLE COLORS:** Bill black; legs and nails dark brownish gray.

***Monticola solitaria philippensis* (P. L. S. Müller)**

**ROCK THRUSH**

*Turdus Philippensis* P. L. S. MÜLLER, 1776, Natursystem, suppl., p. 142 (Philippine Islands).

Lamoo: Twelve males, November 15 (two), 18, 21, 22, 23, 26, 29, 30, December 17 (two), 21; eight females, November 15, 29 (two), December 1, 2, 8 (two), 18; one (?), November 16.

A fairly common winter visitor. This quiet, solitary bird is usually found in the middle tier of tall, dense, second-growth forest near fresh water where it displays a fondness for small noisy rapids. Not observed on the ground.

**PERISHABLE COLORS:** Bill dark gray, becoming black on dorsal aspect of outer half. Feet black. Iris dark vinaceous brown.

***Stachyris nigrocapitata affinis* (McGregor)**

**BLACK-CROWNED TREE BABBLER**

*Zosterornis affinis* MCGREGOR, 1907, Philippine Jour. Sci., sec. A, vol. 2, p. 292 (Lamoo, Bataan).

Mt. Cayapo: One (?) adult.

A rare inhabitant of the high tropical forest. Our only record is of a specimen collected from the canopy of an original forest near our Rio Salapo camp behind Lamoo on December 15 at an altitude of 2100 feet.

The type and heretofore only known example of this race was burned in the Bureau of Science building at Manila in 1945. The destroyed specimen was a male collected on December 3, 1904, by Andres Celestino. (For further information, see Introduction, p. 464.)

***Megalurus palustris forbesi* Bangs**

**STRIATED CANEGRASS WARBLER**

*Megalurus palustris forbesi* BANGS, 1919, Proc. New England Zool. Club, vol. 7, p. 6 (Baguio, Benguet Subprovince, Luzon).

Lamoo: Nine males, two females, one female immature.

A common inhabitant of dry and marshy grass fields throughout the Lamoo region. Usually in pairs or small flocks. During

November and December frequently found singing from tall grass tussocks, posts, and bush tops. When disturbed while in a concealed position this huge grass warbler flies to an exposed perch and sits quietly. Perches selected under conditions of alarm are sometimes 20 feet above the grass, but usually they are from 2 to 5 feet up, which is also the normal height of the singing perches. Birds disturbed while on exposed perches usually dive into the concealment of tall grass.

In habits, general structure, and choice of habitat this curious warbler superficially resembles *Emberizoïdes herbicola* of the New World.

Attention is called to Deignan's recent revision of the races of the Striated Marsh Warbler (1946).

Our Lamoo series of nine males is in fresh plumage, and all but one is completely adult. These and others in the American Museum from Luzon agree well together and with a male from Mindoro. Together they differ from the only other male in fresh plumage at hand, a skin from Catanduanes Island, by reason of longer wing, paler, less reddish greater upper wing covers, and paler, less reddish tail. If additional material confirms these characters, the smaller, brighter Catanduanes bird will warrant racial recognition.

**PERISHABLE COLORS:** Maxilla slate black; mandible pale bluish gray; feet dull grayish brown. Iris dark grayish brown.

***Megalurus timoriensis tweeddalei* McGregor**

**RUFIOUS-CRESTED CANEGRASS WARBLER**

*Megalurus tweeddalei* MCGREGOR, 1908, Philippine Jour. Sci., ser. A, vol. 3, p. 283. New name for *Megalurus ruficeps* (not of Sykes) Tweeddale, 1877, Ann. Mag. Nat. Hist., ser. 4, vol. 20, p. 94 (Philippines).

Balanga-Bagac Road (3 miles west of Manila Bay): One male, one female.

Very uncommon. Our specimens were collected in brushy grass fields bordering the Balanga-Bagac trans-Bataan road several miles west of Manila Bay at an altitude of about 100 feet. No observations were made elsewhere, and in my opinion the species is missing from the open lowland and hill fields of the Lamoo region. Delacour and Mayr

(1946, p. 196) say that this species "... rarely [occurs] below 3000 feet elevation." We did not collect in grass fields above 2000 feet.

**PERISHABLE COLORS:** Maxilla brownish slate; mandible pale bone gray; gape pale bone gray; legs pale vinaceous brownish gray; nails pale brownish gray. Iris Amber Brown.

***Cisticola juncidis tinnabulans* (Swinhoe)**

**COMMON FANTAIL WARBLER**

*Calamanthella tinnabulans* SWINHOE, Jour. North China Branch Roy. Asiatic Soc., no. 2, p. 225 (Hongsun, North Formosa).

Lamiao: One (?).

Not uncommon in lowland cogon grass tussocks and reeds growing in and about

upper portions of the grass it rarely remains exposed for more than a second or two.

***Acrocephalus stentoreus harterti* Salomonsen**

**GREAT REED WARBLER**

*Acrocephalus stentoreus harterti* SALOMONSEN 1928, Ornith. Monatsber., Berlin, vol. 36, no. 4, p. 119 (Laguna de Bai, Luzon).

Vicinity of Limay: One male.

Apparently rare. Our only record of the species is of an adult male shot in flight 4 feet above a small inland fish pond near Limay.

The resident race is generally smaller than migrant *orientalis*. Differences in size are best illustrated by wing and total length measurements (see table 3).

TABLE 3

RANGE OF MEASUREMENTS, IN MILLIMETERS, OF MALES OF TWO RACES OF *Acrocephalus stentoreus*

	<i>orientalis</i>	<i>harterti</i>
Wing	5 ♂: 83-88	3 ♂: 76-78.5
Total length in flesh	2 ♂: 197-198 <sup>a</sup>	3 ♂: 184-190 <sup>b</sup>

<sup>a</sup> Zimmer field measurements.

<sup>b</sup> Zimmer and Gilliard field measurements.

small, fresh-water marshes. Very secretive and difficult to collect during November and December. Apparently always in small isolated colonies. When man intrudes, this tiny bird will fly out of its grassy concealment, perch for a second or two on a high shaft of grass, and then dive for the most favorable retreat. It is a very difficult bird to collect.

**PERISHABLE COLORS:** Maxilla dark brown; mandible pale grayish vinaceous; legs pale grayish vinaceous brown.

***Cisticola exilis rustica* Wallace**

**GOLDEN-HEADED FANTAIL WARBLER**

*Cisticola rustica* WALLACE, 1863, Proc. Zool. Soc. London, p. 25 (Buru Island).

Lamiao: One male, one female, one (?).

Common throughout the open grasslands of the Lamiao lowlands, but difficult to collect because of its habit of nervously moving about in the lower two-thirds of deep grass. When occasionally it climbs, wren-like, into

**PERISHABLE COLORS:** Bill dark brown; the mandible bone white on basal half. Legs gray; nails blackish. Iris Dresden Brown.

***Phylloscopus olivaceus* (Moseley)**

**PHILIPPINE LEAF WARBLER**

*Abrornis olivacea* MOSELEY, 1891, Ibis, vol. 47, pl. 2, fig. 2 (Samar and Negros Islands).

Lamiao: Three males, December 12, 13, 15; two females, December 12, 13.

Although we found this species to be common in the canopy of original high tropical forest at 2100 feet, this indigenous species was not discovered elsewhere. This is enlightening in view of the fact that our survey was far more comprehensive in the lowland forests (up to 1500 feet), the habitat ascribed to *P. olivaceus* by Delacour and Mayr (1946, p. 199).

**PERISHABLE COLORS:** Maxilla dark brownish black; mandible Wax Yellow with a brownish gray wash near tip. Feet and nails

dull yellowish brown. Iris dull chocolate brown.

***Phylloscopus borealis borealis* (Blasius)**

**SIBERIAN WILLOW WARBLER**

*Phyllopneuste borealis* BLASIUS, 1858, Naumania, p. 313 (Sea of Okhotsk).

Lamao: One male, December 6; four females, November 19 (two), 25, December 7.

Migrant Siberian Willow Warblers are not uncommon after the middle of November on outer limbs of the middle and top tiers of original tropical forest and along the edge of high open forest. This species is very small and solitary and is easily overlooked as it hops about cautiously among twigs and leaves 40 to 90 feet up. It flies comparatively little.

PERISHABLE COLORS: Maxilla black; mandible yellow with a dusky tip. Legs pale bone brown. Iris dark vinaceous brown.

***Phylloscopus borealis xanthodryas* Swinhoe**

**JAPANESE WILLOW WARBLER**

*Phylloscopus xanthodryas* SWINHOE, 1863, Proc. Zool. Soc. London, p. 296 (Amoy, south China).

Lamao: Two males, November 26, December 6.

Apparently a very uncommon winter visitant. Japanese Willow Warblers proved the rarest of the five species and subspecies of *Phylloscopus* that we collected on Bataan during November and December.

***Phylloscopus borealis kennicotti* (Baird)**

**ALASKAN WILLOW WARBLER**

*Phyllopneuste kennicotti* BAIRD, 1869, Trans. Chicago Acad. Sci., vol. 1, p. 313, pl. 30, fig. 2 (Alaska).

Lamao: Two males, November 14, December 13; five females, November 30, December 3 (two), 10, 15; three (?), November 18 (two), December 6.

A common winter visitant from the New World. All our specimens were collected in original tropical forest (100–2100 feet) among leaves of the middle and top tiers.

It is of confirmatory interest to note that I arrived independently at conclusions regarding the wintering range of this subspecies which are similar to those set forth recently

by Amadon and Jewett (1948). Inasmuch as their interesting discovery came after publication of Delacour and Mayr's "Birds of the Philippines," this race is not mentioned therein.

***Phylloscopus coronatus ijimae* (Stejneger)**

**IJIMA WILLOW WARBLER**

*Acanthopneuste ijimae* STEJNEGER, 1892, Proc. U. S. Natl. Mus., vol. 15, p. 372 (Miyakejima, Seven Islands of Idzu, Japan).

Lamao: Three males, three females, December 15. [One (?), Catbalogan, Samar Island (Steere Coll.), April 4, 1888.]

So far as I know, the above records constitute the only published data as to the winter range of this rare migrant as well as the first mention of the occurrence of the species *P. coronatus* in the Philippines.

In the Rothschild Collection, misidentified as *P. olivaceus*, I find a skin (A.M.N.H. No. 450403) of *P. c. ijimae* from Catbalogan, Samar Island, which adds much light to the riddle of the wintering grounds of this bird. Together with the six specimens we collected it is possible to venture the supposition that *P. c. ijimae* winters in the high tropical forests of the southern Philippines, migrating southward in December and northward in March and April.

Apparently common during migrations in the uppermost tier of original high tropical forest.

For further information, see Phillips (1947) and Ticehurst (1938).

***Orthotomus atrogularis chloronotus***

**Ogilvie-Grant**

**COMMON TAILOR-BIRD**

*Orthotomus chloronotus* OGILVIE-GRANT, Bull. Brit. Ornith. Club, vol. 3, p. 2 (Cape Engano, northeast Luzon).

Lamao: Seven males, 18 females, three (?); Mt. Cayapo: one female, 2100 feet.

Common. The majority of these specimens were collected in lowland bamboo and mixed thickets; several were taken in matted, second-growth hill forest; and one specimen was collected somewhere in the immediate vicinity of the Rio Salapo camp at 2100 feet, an area surrounded by original high tropical forest.



It is of particular interest that four American Museum specimens of this species from near-by Manila and nine from localities east and south of that city have the back dark gray. Were it not for two specimens (listed below) from this same general region, which have backs with an almost equal amount of gray and green, the races *chloronotus* (green back) and *derbianus* (gray back) would certainly seem worthy of specific distinction (Antipolo, Rizal, coll. by J. T. Zimmer, No. 296293, and "Southern Luzon," coll. by A. Everett, No. 592414).

Records at hand suggest that a thin band of intermediacy occurs wherever these two races merge geographically. It is probable that an ancient barrier severed the ancestral stock into two populations and that these have but recently come into contact again. Credence for this hypothesis is found in another, namely, the generally accepted belief that north-central Luzon was divided for a time into two islands by an inland waterway extending more or less between Lingayen and Manila bays.

Although coloration of upper parts is fairly constant and sexual dimorphism is not discernible, our series displays a good deal of individual variation in coloration of throat and chest, and in length of tail. Some examples are grayish below with subobsolete slate edgings; in others the under parts are much darker, more smoke gray, strongly contrasted with white central feather streaks, particularly on the throat. In range of measurement seven males from the Lamao region measure: wing, 50–55 mm.; tail, 43.5–53.5; culmen from base, 19–21.

**PERISHABLE COLORS:** Maxilla dark brown; mandible pale gray washed with vinaceous; legs pale vinaceous gray. Iris Sudan Brown.

***Rhipidura cyaniceps cyaniceps* (Cassin)**

**BLUE-HEADED FANTAIL**

*Muscipeta cyaniceps* CASSIN, 1855, Proc. Acad. Nat. Sci. Philadelphia, p. 438 (Philippines, restricted to Luzon).

Lamao: One male, two females; Mt. Cayapo: seven males, two females (also nine specimens shipped to the National Museum of the Philippines).

A common inhabitant of the middle and

top tiers of second-growth and original forest. Most frequently encountered in the lowlands but also found in the crown of high tropical forest (2100 feet).

**PERISHABLE COLORS:** Bill black; legs dark grayish vinaceous. Iris dark brown.

***Rhipidura javanica nigritorquis* Vigors**

**MALAYSIAN FANTAIL**

*Rhipidura nigritorquis* VIGORS, 1831, Proc. Zool. Soc. London, p. 97 (Manila).

Lamao: One male, two females.

Uncommon. A few birds were observed during November and December in lowland clearings, particularly pasture and agricultural areas in the vicinity of human habitations.

**PERISHABLE COLORS:** Bill, legs, and talons black. Iris dark brown.

***Muscicapa griseisticta griseisticta* (Swinhoe)**

**GRAY-SPOTTED FLYCATCHER**

*Hemichelidon griseisticta* SWINHOE, 1861, Ibis, p. 330 (Amoy, China).

Lamao forests: Ten males, November 16, 21, 23, 24 (two), 25, December 1, 4, 5, 7; one (male?), November 18; eight females, November 16 (two), 24, 26, 29 (two), December 4 (two); one (?), November 21.

Very common in the lower middle tier of high second-growth and original forest up to an altitude of about 1200 feet.

Unlike all other migrants that we observed on Bataan, individuals of this species appear to select small segments of forest as their solitary wintering territory. These segments, which may be compared in size to that of an average theater, were found to be at least 50 yards apart, but usually they were much more widely separated. It would be interesting to determine through the use of banding methods if these winter visitors from Japan and northeastern Asia are as closely tied to wintering territory as I suspect and, if so, whether they return to the same tiny areas year after year.

**PERISHABLE COLORS:** Bill black, yellowing at base of mandible; feet blackish. Iris dark brownish slate.

***Muscicapa cyanomelana* Temminck**

**JAPANESE BLUE FLYCATCHER**

*Muscicapa cyanomelana* TEMMINCK, 1828, Nou-

veau recueil de planches coloriées d'oiseaux, vol. 4, no. 79, p. 470 (Japan).

Lamao: Three males, November 20 (two), 23.

According to Delacour and Mayr (1946, p. 209), a rare winter visitor. Apparently a small flock of these migrants from Japan passed through the Lamao lowlands November 20 and 23. Our specimens were all taken from the middle tier of a high sentinel tree located in the open lowlands near a small rapids on the Lamao River.

PERISHABLE COLORS: Bill, legs, and nails black. Iris dark brown.

***Muscicapa narcissina narcissina* Temminck**

**NARCISSUS FLYCATCHER**

*Muscicapa narcissina* TEMMINCK, 1835, Nouveau recueil de planches coloriées d'oiseaux, vol. 5, no. 97, pl. 577, fig. 1 (Japan).

Lamao: One male adult, two male immatures, November 19, 20 (two).

An occasional visitor, according to Delacour and Mayr (1946, p. 209). Since this migrant from Japan and eastern Asia and *Muscicapa cyanomelana* from Japan were collected between the dates of November 19 and 23, I am of the opinion that we intercepted a migratory wave which moved southward through the Lamao region during the period specified.

PERISHABLE COLORS: Bill black, the posterior half of mandible becoming bluish gray; legs pale gray. Iris chocolate brown.

***Muscicapa rufigaster simplex* (Blyth)**

**MANGROVE BLUE FLYCATCHER**

*Cyornis simplex* BLYTH, 1870, Ibis, p. 165 (Borneo, error, substitute Luzon).

Lamao: Three males.

PERISHABLE COLORS: Bill black; legs pale gray; nails blackish. Iris very dark brown.

***Hypothymis azurea azurea* (Boddaert)**

**BLACK-NAPE BLUE MONARCH**

*Muscicapa azurea* BODDAERT, 1783, Tables des planches enluminées d'histoire naturelle, p. 41 (ex Daubenton) (Philippines).

Lamao: Nine males, two [males], eight females, three (?).

Very common throughout the second-growth and high, open forests up to an altitude of 2100 feet.

PERISHABLE COLORS: Bill blue with a black tip; legs blue gray. Another description: Bill Tyrian Blue with a black tip; legs darker than Tyrian Blue. Iris dark brown.

***Copsychus luzoniensis luzoniensis* (Kittlitz)**

**WHITE-EYEBROWED SHAMA**

*Turdus luzoniensis* KITTLITZ, 1832, Kupfertafeln zur Naturgeschichte der Vögel, vol. 7, pl. 11, fig. 2 (Luzon).

Lamao: One male, one female.

Apparently rare. Manuel Celestino collected one specimen "in thick undergrowth in secondary forest, 3 feet up."

PERISHABLE COLORS: Bill dark brownish black, becoming pale brown on posterior sides of mandible; feet bone white with a faint vinaceous wash; nails bone white. Iris dark vinaceous brown.

***Terpsiphone rufus rufus* (Gray)**

**RUFIOUS PARADISE FLYCATCHER**

*Tchitrea rufa* GRAY, 1843, Ann. Mag. Nat. Hist., vol. 11, p. 371 (Philippine Islands).

Lamao: One female.

Apparently rare. Our specimen was taken from a perch 6 feet up in a heavily forested gorge of the lower Lamao River (altitude 75 feet).

PERISHABLE COLORS: Bill near Windsor Blue with a black tip; a Windsor Blue eye ring which on dorsal and basal thirds becomes a wattle with a maximum width of 2 mm. Iris dark vinaceous brown.

***Pachycephala philippinensis philippinensis* (Walden)**

**YELLOW-BELLIED WHISTLER**

*Hyloterpe philippinensis* WALDEN, 1872, Ann. Mag. Nat. Hist., ser. 4, vol. 10, p. 252 (Luzon).

Lamao: One male; Mt. Cayapo: seven males, one male (?), six females, one (?).

Common in the upland forests of the Rio Salapo camp (2100 feet).

PERISHABLE COLORS: Bill black; legs clear Green-Blue Gray; nails pale bluish vinaceous. Iris chocolate.

***Parus elegans elegans* Lesson****ELEGANT TITMOUSE**

*Parus elegans* LESSON, 1831, *Traité d'ornithologie*, p. 456 (no locality given = Philippines).

Lamao: One male, three females; Mt. Cayapo, three males, seven females, two (?). Fairly common and widely distributed throughout the true forests from the lowlands (not observed below 500 feet) to the moss-cloud forests where at 4000 feet I observed three birds.

PERISHABLE COLORS: Bill black, becoming pale bluish gray on posterior sides of maxilla and on posterior half of mandible. Legs and nails Gull Gray. Iris dark brown.

***Parus semilarvatus* (Salvadori)****WHITE-FRONTED TITMOUSE**

*Melaniparus semilarvatus* SALVADORI, 1865, *Atti Soc. Italiana Sci. Nat.*, vol. 8, p. 377 (Africa, error = Philippines).

Lamao: One male, one female; Mt. Cayapo: one male, one female.

"A rare forest bird, frequenting the top of lofty trees in pairs or families" (Delacour and Mayr, 1946, p. 218). In the Lamao forests, where we obtained specimens between the altitudes of 1000 and 2100 feet, this species is not uncommon.

PERISHABLE COLORS: Bill black; legs and nails deep slaty black. Iris darker than Natal Brown.

***Sitta frontalis aenochlamys* (Sharpe)****VELVET-FRONTED NUTHATCH**

*Dendrophila aenochlamys* SHARPE, 1877, *Trans. Linnean Soc. London*, ser. 2 (zool.), vol. 1, p. 338, pl. 53 (Guimaras).

Rio Salapo camp: Four males, one female.

Fairly common in the middle and lower tiers of original high tropical forest. Not observed below 1000 feet.

***Rhabdornis mystacalis mystacalis* (Temminck)****STRIPED-HEADED CREEPER**

*Meliphaga mystacalis* TEMMINCK, 1825, *Nouveau recueil de planches coloriées d'oiseaux*, no. 56, pl. 335, fig. 2 (vicinity of Manila).

Lamao: One male; Mt. Cayapo: four males, two females, two (?).

Not uncommon in the middle and lower tiers of original high tropical forest where it was once observed in a wave of birds containing a Pigmy Woodpecker (*Dryobates maculatus validirostris*), several White-lored Orioles (*Oriolus albiloris*), a number of Black Graybirds (*Edolisoma c. caerulescens*), and several small forest crown warblers (*Phylloscopus*). Not observed below 700 feet.

PERISHABLE COLORS: Bill black; legs dark slate. Iris dark chocolate brown.

***Dicaeum bicolor inexpectatus* (Hartert)****BICOLORED FLOWERPECKER**

*Prionochilus inexpectatus* HARTERT, 1895, *Novitates Zool.*, vol. 2, pp. 64, 486 (Mindoro).

Lamao: Two males.

Apparently a very uncommon inhabitant of the lowland forest crown. Our only records are of two specimens taken at altitudes of about 700 feet.

PERISHABLE COLORS: Bill, legs, and nails black. Iris Morocco Brown.

***Dicaeum papuense papuense* (Gmelin)****PHILIPPINE FLOWERPECKER**

*Pipra papuensis* GMELIN, 1788, *Systema naturae*, vol. 1, pt. 2, p. 1004 ("Nova Guinea," error = Philippines).

Lamao: Six males, one female, one (?).

Fairly common in the semi-open orchards of the Lamao Agricultural Research Station.

PERISHABLE COLORS: Bill, legs, and nails black. Iris Carmine.

***Dicaeum pygmaeum pygmaeum* (Kittlitz)****PIGMY FLOWERPECKER**

*Nectarinia pygmaea* KITTLITZ, 1833, *Mem. Acad. Imp. Sci. St.-Petersbourg*, vol. 2, pts. 1, 2, pl. 2 ("Luzon").

Lamao: Four males, three females.

Fairly common in the uppermost tier of second-growth and partition forests of the lowlands. We did not obtain specimens above 1000 feet.

PERISHABLE COLORS: Maxilla slaty black, mandible Gull Gray with a black tip. Legs dark slate. Iris dark brown.

***Nectarinia sperata* (Linnaeus)****VAN HASSELT'S SUNBIRD**

*Certhia sperata* LINNAEUS, 1766, *Systema naturae*, ed. 12, vol. 1, p. 186 ("Philippines").

Heretofore this species was thought to be represented on Luzon by two very distinct races: (1) *henkei* of the northern portion of the island which has a velvet black mantle and green crown, and (2) *sperata* of the southern portion which has a bright maroon mantle and bronze green crown. Our specimens from southeastern Bataan (a locality about midway between the ranges of the above-mentioned races) are intermediate in nature. However, the pattern of characteristics distinguishing the northern from the southern race is so pronounced, and the pattern of intermediacy in Bataan birds is so distinct that I find it advisable to fashion a separate category for them, as follows:

***Nectarinia sperata thereseae*, new subspecies**

TYPE: A.M.N.H. No. 348777; adult male; Lamao, Bataan, November 30, 1947, Manuel Celestino, collector.

DIAGNOSIS: Adult male: Nearest to *sperata* but crown iridescent green as in *henkei*, without the reddish bronze reflections of the former. Rump and upper tail coverts green as in *henkei* without the violet reflections of *sperata*. Mantle maroon as in *sperata*, not velvety black as in *henkei*. Breast somewhat darker, more deep scarlet as in *henkei*, not bright scarlet as in *sperata*.

Adult female: Similar to female of *henkei*, and differing from females of *sperata* by having secondaries with duller outer edges, more olive brown, less bright Amber Brown.

Immature males: Rather similar to females but darker above, more grayish, less olive.

MEASUREMENTS OF THE TYPE: Wing, 51 mm.; tail, 31; culmen from base, 20.5. Total length in flesh, 98.

SPECIMENS COLLECTED: Lamao, two adult males (including type), one immature male, and two adult females.

DISTRIBUTION: Known only from the Bataan Peninsula where it is not uncommon in the semi-forested lowlands.

PERISHABLE COLORS: Male: bill, legs, and nails black; iris dark brown. Female: bill becoming pale vinaceous buff at base of mandible. Gape bright yellowish orange; legs and nails black. Iris dark purplish brown.

REMARKS: This beautiful little sunbird is named in honor of my aunt, Miss Thérèse Waelchli, of the Blue Bird School, Ruxton,

Maryland, whose love of birds has been an inspiration to me among many.

***Nectarinia jugularis jugularis* (Linnaeus)**

**OLIVE-BACKED SUNBIRD**

*Certhia jugularis* LINNAEUS, 1766, *Systema naturae*, ed. 12, vol. 1, p. 185 (Philippines).

Lamao: One male adult, three male subadults, on male immature, three female adults.

Fairly common in the tops of spaced-out trees and partition forest of the lowlands, particularly in the orchards of the Lamao Agricultural Research Station.

Critical examination of 60 specimens from localities ranging from northern Luzon to Basilan Island reveals that *jugularis* undergoes several changes at the northern and southern extremities of its extensive range. For example, four males at hand from northern Luzon are yellow below, not yellow washed with orange as in four males from Basilan Island. Also, as shown below, the northern examples have the wing shorter.

These differences are constant. The series mentioned may be readily separated both on the basis of coloration of under parts and on length of wing. I have not divided the Philippine population because in so doing a major portion of the birds would remain unidentifiable intermediates.

MEASUREMENTS: Wing length of adult males, north Luzon (four), 51–52 mm. (51.1); Manila and vicinity (four), 51.5–55.5 (53.9); south Luzon, Marinduque, Mindoro (seven), 55–59.5 (57.9); Basilan (four), 55–56.5 (55.5).

PERISHABLE COLORS: Bill, legs, and nails black. Iris dark brown.

***Aethopyga shellei flavipectus* Ogilvie-Grant**

**LOVELY SUNBIRD**

*Aethopyga flavipectus* OGILVIE-GRANT, 1894, *Bull. Brit. Ornith. Club*, vol. 3, p. 49 (Mindoro).

Mt. Cayapo: One male adult.

Apparently very uncommon. Our only record is of a specimen shot from the original high tropical forest crown at an altitude of 2100 feet.

PERISHABLE COLORS: Bill black, becoming dark vinaceous slate on mandible; legs and toes dark vinaceous black. Iris dark coffee brown.

**Zosterops nigrorum luzonica** Ogilvie-Grant

## YELLOW WHITE-EYE

*Zosterops luzonica* OGILVIE-GRANT, 1895, Bull. Brit. Ornith. Club. vol. 4, p. 22 (south Luzon).

Lamiao: One male, one female.

Uncommon. Our only records are of a male and female taken in the lowlands on November 29 by a local hunter.

PERISHABLE COLORS: Bill black, becoming paler, more dark gray at base of mandible; legs dark gray; nails dark brownish gray.

**Acridotheres cristatellus** (Linnaeus)

## CRESTED MYNA

*Gracula cristatella* LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 109 ("China").

Lamiao: Four males, three females.

Common in agricultural and pasture areas of the Lamiao lowlands. More frequently found in loose pairs or small flocks than alone.

PERISHABLE COLORS: Bill citrine yellow. Legs brownish yellow; nails dusky gray. Iris a little browner than Salmon-Orange.

**Sarcops calvus calvus** (Linnaeus)

## COLETO

*Gracula calva* LINNAEUS, 1766, Systema naturae, ed. 12, vol. 1, p. 164 (Philippines, restricted to Luzon by Gilliard, 1949, Amer. Mus. Novitates, no. 1429, p. 2).

Lamiao: Eight males, 10 females, two (?).

A very common resident of the open lowlands, particularly in agricultural areas and pastures. Common in the vicinity of human habitations. Most of our specimens were taken from a fruit tree growing at the edge of the barrio of Lamiao. Always in noisy flocks.

**Passer montanus (malaccensis?)** Dubois

## TREE SPARROW

*Passer montanus* var. *Malaccensis* DUBOIS, 1885, Faune des vertebres de la Belgique, Serie des oiseaux, vol. 1, p. 572 (Malacca).

Vicinity of Limay: One male, two females.

Common in the towns and barrios of the northeastern coast of Bataan. Our specimens were taken in a little barrio just north of Limay on the road to Manila. Not observed at Lamiao barrio or on southeastern Bataan.

**Padda oryzivora** (Linnaeus)

## JAVA SPARROW

*Loxia oryzivora* LINNAEUS, 1758, Systema naturae, ed. 10, vol. 1, p. 173 ("Asia and Aethiopia").

Limay: Three males, five females.

Common in the immediate vicinity of human habitations. It is possible that the absence of this species and *Passer montanus* from Lamiao barrio may be due to the bombing and burning of the village during the war.

PERISHABLE COLORS: Bill pinkish red, strongest on basal half of dorsal aspect of maxilla. Legs pale vinaceous gray. Iris Carmine.

**Lonchura leucogaster everetti** (Tweeddale)

## WHITE-BREASTED MANNIKIN

*Oryzercus everetti* TWEEDDALE, 1877, Ann. Mag. Nat. Hist., ser. 4, vol. 20, p. 96 (Mt. Alban, Luzon).

Lamiao: Three males, two females.

A common gregarious inhabitant of lowland grass fields.

PERISHABLE COLORS: Maxilla black, mandible dull gray with light gray sides. Legs dark bluish gray. Iris Hay's Russet.

**Lonchura punctulata cabanisi** (Sharpe)

## NUTMEG MANNIKIN

*Munia cabanisi* SHARPE, 1890, Catalogue of the birds in the British Museum, vol. 13, p. 353 (confined to Luzon). New name for *Oxyercus jagori* (not *Munia jagori* Martens) Cabanis, 1872, Jour. f. Ornith., p. 317.

Lamiao: One male, one female.

Common in grass fields of the Lamiao lowlands where in November and December it is always found in large flocks.

PERISHABLE COLORS: Bill Deep Dutch Blue, becoming slaty on outer half of maxilla, mandible with a narrow bone white tip and cutting edges on outer half. Feet and nails Dutch Blue. Iris a little browner than Nopal Red.

**Lonchura ferruginosa jagori** (Martens)

## CHESTNUT MANNIKIN

*Munia (Dermophrys) jagori* "Cabanis," MARTENS, 1866, Jour. f. Ornith., p. 14 (Luzon).

Lamiao: One male, one female.

Probably fairly common in dry grass fields

of the Lamao lowlands but difficult to see except in flight and therefore hard to collect. Always in flocks.

**PERISHABLE COLORS:** Bill bright Gull Gray; legs and nails slate gray. Iris dark chocolate brown.

***Dicrurus baliassius baliassius* (Linnaeus)**

**BALICASSIUS**

*Corvus baliassius* LINNAEUS, 1766, *Systema naturae*, ed. 12, vol. 1, p. 157 (Philippines).

Lamao: Seven males, four females.

Fairly common in second growth and original woodlands of the lowlands and uncommon in the original high tropical forest (one specimen was taken at 2100 feet). Usually solitary in November and December.

Vaurie (1947, p. 2) in designating *abraensis* from north Luzon states, "... from Lingayen Gulf down, [*abraensis*] probably intergrades with *baliassius*." The diagnostic characters of *abraensis* are chiefly longer bill and wing. Measurements of two series of eight adult males each from central and southern Luzon reveal no appreciable difference in size between the two populations. Together they differ from northern birds as indicated by Vaurie.

**PERISHABLE COLORS:** Bill and legs black. Iris deep brown.

***Oriolus chinensis chinensis* Linnaeus**

**BLACK-NAPED ORIOLE**

*Oriolus chinensis* LINNAEUS, 1766, *Systema naturae*, ed. 12, p. 160 (China, error, Cochinchina, *ex* Brisson = Manila of Meinertzhagen).

Lamao: Seven males, eight females.

Very common throughout the open and semi-open lowlands away from the immediate vicinity of human habitations. Always in small flocks during November and December.

**PERISHABLE COLORS:** Bill Hydrangea Pink, shading to Deep Vinaceous on posterior half. Legs Pale Payne's Gray. Iris dark brown.

In assigning a precise type locality for this race, Meinertzhagen (1923, p. 72) wrote: "... the name *chinensis* is clearly applicable to one member of this group, which induces me to accept it for the Philippine bird, to which the description and plate most closely agree. In the days of Brisson, type-localities

were very vague and the Philippines might easily be held to be covered by the general term China. As the type-locality of *chinensis*, I cite Manila."

Topotypical and nearly topotypical examples in the American Museum of Natural History from the vicinity of Manila show little variation. They differ from a long series from Sorsogon, southern Luzon, and from a single specimen from Fuga Island off the northern tip of Luzon, both of which have been described by the author (1949, *Proc. Biol. Soc. Washington*, vol. 62, pp. 155-158). Characters distinguishing each of the three Luzon races are sufficiently vivid to permit accurate field identification.

***Oriolus isabellae* Ogilvie-Grant**

**GRANT'S ORIOLE**

*Oriolus isabellae* OGILVIE-GRANT, 1894, *Bull. Brit. Ornith. Club*, vol. 4, p. 2 (type, female, mountains of northern Luzon).

Lamao: One male adult.

Rare. Manuel Celestino shot this specimen from a perch 25 feet up in second-growth forest on the bank of the Lamao River, 3.5 miles inland from Manila Bay. Altitude 150 to 200 feet. It was in company with two species of Graybird, *Edolisoma morio elusum* and *E. c. caerulescens*.

Discovery of this rare species in the same forests occupied by *Oriolus albiloris* solves a long-standing riddle. Delacour and Mayr (1946, p. 254) state the problem as follows: "Little is known of these two small mountain orioles. Their similarity to each other suggests that they belong to a single species. Possibly *albiloris* is the immature plumage or a color phase of *isabellae*, but only further study can answer these questions."

Examination of 12 examples of *albiloris* and one *isabellae* indicates conclusively that the species are distinct. Six males and six females of *albiloris* before me have the lores distinctively white, not yellow as in *isabellae*; the bill is short, slender, and deep reddish brown (Bay of Ridgway, in life), not heavy and dark gray (Slate Gray to Silver Gray of Ridgway, in life) as in *isabellae*. These diagnostic characters are sufficiently vivid to be seen easily in the field. In other respects *albiloris* differs from *isabellae* by having the throat

and chest darker, more olive yellow, less lemon yellow, the lower chest and flanks with narrow olive striping, not solid yellow as in *isabellae*; by having blackish subterminal spots on all but the central pair of rectrices; the latter are absent in *isabellae*.

through the forest. Once observed traveling in company with a variety of birds. See remarks under *Rhabdornis mystacalis*.

PERISHABLE COLORS: Bill Bay with a narrow black edging at base of mandible. Legs Dark Plumbeous. Iris Mahogany Red.

TABLE 4  
MEASUREMENTS, IN MILLIMETERS, OF TWO SPECIES OF *Oriolus*

	Wing	Tail	Bill from Nostril	Total Length in Life
<i>albiloris</i>				
Lamao, 6 ♂	114-121	72-76	14-16	199-203 (3)
Lamao, 5 ♀	109-114	67-73.5	14-16.5	182-202 (2)
<i>isabellae</i>				
Lamao, 1 ♂ ad.	116	84.5	19	226

PERISHABLE COLORS: Maxilla Slate Gray with Gray cutting edges; mandible Gull Gray with edges as in maxilla. Legs and toes Gray (Dark Gull Gray). Iris a little brighter than Ox-blood Red (in sunlight). Skin around eye dark gray.

*Oriolus albiloris* Ogilvie-Grant

WHITE-LORED ORIOLE

*Oriolus albiloris* OGILVIE-GRANT, 1894, Bull. Brit. Ornith. Club, vol. 3, p. 49 ("... mountains of northern Luzon").

Lamao: Six males, five females.

Fairly common in the canopy of original tropical forest of the Mariveles Mountains. Not observed above 1200 feet. Usually in small silent flocks which move rapidly

*Corvus macrorhynchus philippinus* Bonaparte  
PHILIPPINE CROW

*Corvus philippinus* BONAPARTE, 1853, Compt. Rendus Acad. Sci., Paris, vol. 37, p. 830 ("Philippines").

Lamao: Four females, one (?).

Very common throughout the open and semi-open lowlands. Economically this species is the most detrimental bird on Bataan. It destroys large numbers of dwarf papayas by ripping open the partially ripened fruit. When searching for food in a lowland garden, it is very persistent and wily. I have observed it attacking fruit plants growing within 30 feet of a native house.

Iris chocolate brown.



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