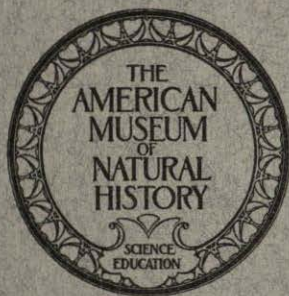


RESULTS OF THE ARCHBOLD
EXPEDITIONS. No. 43

BIRDS OF THE 1938-1939 NEW GUINEA EXPEDITION

By A. L. RAND



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Article VII.—RESULTS OF THE ARCHBOLD EXPEDITIONS. NO. 43

BIRDS OF THE 1938-1939 NEW GUINEA EXPEDITION

By A. L. RAND

This is the report on the bird collection made by the 1938-1939 Expedition to the north slope of the Snow Mountains of Netherlands New Guinea. The report also includes the few specimens collected at the coastal base camp at Hollandia. The "Summary of the 1938-1939 New Guinea Expedition" (1942, Results of the Archbold Expeditions, No. 41, Bull. Amer. Mus. Nat. Hist., LXXIX, pp. 197-288, Pls. 1-xxxv, and 3 maps), giving an account of the expedition and a statement of its results serves as an introduction to this paper.

Some 380 forms are discussed in the following report. No new names are proposed in it, the new forms described from the collection having been published in previous papers. The forty new forms described included four new species, for one of which it was necessary to erect a new genus.

The sequence of genera and species followed is that used in Mayr's "List of New Guinea Birds" (1941, Amer. Mus. Nat. Hist., New York).

I am indebted to Mr. J. T. Zimmer and Dr. Ernst Mayr for assistance and advice in the preparation of this report.

Casuarius bennetti Gould

In the mountains on the north slope of the Snow Mountains, up to 2,800 meters, occasionally cassowary droppings were found in the forest. This indicates that some cassowary, probably of this species, occurs there. This mountain cassowary must be much rarer than the lowland bird, for in the period of more than five months spent in its habitat none was seen.

Casuarius unappendiculatus occipitalis

Salvadori

Bernhard Camp: 2 ♂ ad., 1 ♀ ad.; April 10-May 2.

Hollandia: 1 ♀ ad., 1 sex? ad.; June 29.

Found up to 50 meters altitude.

TARSUS.—♂ ad. 316 mm., 319; ♀ ad. 332.

The material consists of two skins, a head in alcohol and a pair of wings from Bernhard Camp, and a skin from Hollandia, all with notes on coloration of the soft parts; the other Hollandia bird has no data.

The first striking feature about these four birds with data is that there is only slight individual variation. All five specimens have a very high, straight casque, broadened posteriorly and especially dorsally. The casque is somewhat larger and better developed in the female (which is also generally larger). The casque thus differs from the plates given by Rothschild (1900, Trans. Zool. Soc. London, XV, Pls. xxix-xxxiii) and Salvadori (1883, Mem. Acad. Sci. Torino, XXXIV, Pl. II) for this species in having an area near the apex more flattened and broader than elsewhere. The gape-wattle is small. The single club-shaped neck-wattle is about 35 mm. long in each female, about 25 and 30 mm. in the males (in the specimens). In color there are only minor variations; the side of the head is blue, the throat and upper half of the fore neck, dorsally about to the mid-line, dark blue; the lower fore neck purplish red, in one mixed with yellow, in the Hollandia bird dark red; wattle somewhat paler; back of head and hind neck light blue, with a conspicuous yellow or orange crescent on the nape; lower hind neck orange or yellow; the rugose area extending far down into the feathered area of the side of the neck reddish purple or purplish blue, with the skin heavily folded. While there is variation in the shade of colors, the areas of different colors are constant and indicate that these are the characters of the population of this area. The characters shown by the birds of the Hollandia-Idenburg River area are a combination of those of *occipitalis* and *philipi* of Rothschild's monograph (*op. cit.*).

The question as to what name to give these birds is not easily decided. Mayr (1940, Amer. Mus. Novitates, No. 1056, p. 4) gives *aurantiacus* as the form inhabiting this area, but that race has the fore neck and sides of the neck yellow, a contrasting blue wattle and a low casque. Mayr's suggestion that with increasing age the colors darken from yellow to blue is at variance with my conclusions based on these four adults, one from an area widely separated from the other three, which vary but little amongst themselves, indicating that they show the normal adult condition. It is useless to speculate on the identity of *rufotinctus*, based on an immature. For the present I am considering this population as *occipitalis*, with a tendency toward *philipi* in the dark red or purplish red lower fore neck and wattle, and the darker blue throat and upper fore neck.

There are several other points I may mention. Two adults (♂, ♀) have no claws on their wings; one male has a claw on one wing, none on the other; one (♀) has claws about 50 mm. long on each wing. The laying female from Hollandia weighed fifty-eight kilograms. Rothschild (*op. cit.*) records *sclaterii* as the largest cassowary, but the present form is considerably larger than *sclaterii* from the Fly River area, both in size of the head (five of the present form, compared with five *sclaterii*) and in the length of the tarsus (*sclaterii*, tarsus ♂ ad. 274 mm.).

A number of cassowary eggs, presumably of this form, were brought in to Hollandia during July by local natives. Of these I saved six, which illustrate the diversity of size and color, which is considerable. The unglossed ground color varies from gray green to pale green; elevated granules with a high gloss thickly cover the shell; in some specimens more or less connected to form a network; in one specimen they have run together so that the ground color is evident only as small pale spots; in another the surface of the shell is almost completely covered with these confluent granulations, giving a rough, glazed surface; the color of these granulations varies greatly from light green to dark dull green, and dark intense

green. Size: 160 by 105 mm., 159 by 99, 154 by 104, 149 by 93, 140 by 97, and 139 by 94.

The breeding season includes at least May to July, as females in breeding condition were taken in May and June.

***Poliocephalus ruficollis tricolor* (Gray)**

Sentani: 1 sex?; November 28.

WING.—98 mm.

This bird is in breeding plumage.

***Poliocephalus novaehollandiae novaehollandiae* (Stephens)**

Habbema Lake: 1 ♂, 1 ♀; August 2, 23.

Sentani: 5 sex?; November 13-29.

Found up to 3,225 meters altitude.

WING.—♂ 114 mm.; ♀ 108; sex? 94, 96, 103.

This form has usually been considered as a winter migrant from Australia. The Habbema female had just finished laying, indicating that this form breeds in New Guinea, as the dates of some previous records have indicated. Since birds in breeding plumage have been taken at Sentani Lake where *tricolor* also occurs, it is probable that both *tricolor* and *novaehollandiae* breed in the same area, and it becomes necessary to consider *novaehollandiae* a different species. The races *longirostris* Mayr and *leucostemos* Mayr also belong in the species *novaehollandiae*.

There were several pairs of these little grebes about the lower end of Lake Habbema and about the reedy outlet stream during August. The stomach contents of one bird included insects and snails. The male had its testes somewhat enlarged; the female had just finished laying.

***Phalacrocorax sulcirostris* (Brandt)**

Bernhard Camp: 8 ♂, 4 ♀; March 19-April 23.

Sentani: 6 sex?; October 20-December 18.

Found up to 50 meters altitude.

WING.—♂ 245 mm., 251, 251, 251, 252, 254, 259, 259; ♀ 240, 242, 242, 246.

The Bernhard Camp birds are all in breeding plumage.

This was a common species in the lagoon in front of Bernhard Camp and in the smaller streams; thirty or forty were often seen in a morning's hunting by canoe. Almost all the March and April specimens showed some enlargement of gonads, and three were in breeding condition. Of four stomachs examined, all contained fish.

Haliator melanoleucos melanoleucos
(Vieillot)

Lake Habbema: 1 ♀; August 1.

Balim River Camp: 2 ♂, 1 sex?; December 11, 13.

Bernhard Camp: 1 ♀; March 19.

Sentani: 1 sex?; December 8.

Found up to 3,225 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
3,225 meters		228 mm.
1,600 "	245, 246	
50 "		216

The single Habbema bird was first seen on July 30; it was the only one seen there. On the Balim River the white-breasted cormorant was fairly common; sometimes as many as twenty or thirty birds were seen roosting on a single tree along the river. It was the only cormorant there. On the Idenburg River it was uncommon, being outnumbered twenty to one or more by *P. sulcirostris*. Of four stomachs examined, three contained crayfish, and one, frogs. None was in breeding condition.

Anhinga rufa papua Rand

Sentani Lake: 1 ♂ ad.; December 13.

Found near sea level.

WING.—348 mm.

A few Anhingas were seen on the waterways about Bernhard Camp, but they were very shy, and none could be secured.

Fregata ariel Gray

Hollandia: 1 sex?; 1938.

WING.—556 mm.

Ardea sumatrana Raffles

Bernhard Camp: 2 ♂, 2 ♀; March 21–April 22.

Found at 50 meters altitude.

WING.—♂ 463 mm., 472; ♀ 435, 451.

The big heron was a solitary, uncommon

bird about Bernhard Camp, the only place I found it. About a dozen were seen. They were along the narrow, deep, forest-fringed waterways and were seen perched well up in the overhanging trees. Two stomachs examined contained fish. The females (March and April) had slightly enlarged gonads, but none was in breeding condition.

Notophox novaehollandiae novaehollandiae (Latham)

Balim River Camp: 4 ♂, 1 ♀; December 8–15.

Found at 1,600 meters altitude.

WING.—♂ 327 mm., 331, 332, 335; ♀ 315.

This heron was not uncommon along the Balim where it was usually seen flying by or perched on trees overhanging the river. Occasionally they were found feeding about ponds and ditches in the garden land away from the river. None was seen on the Idenburg. Of three stomachs examined, one contained insects only; one, four tadpoles and a locust, and one, four frogs, two lizards and large insects.

Notophox picata (Gould)

Bernhard Camp: 7 ♂ ad.; April 29, May 3.

Found at 50 meters altitude.

WING.—♂ 222 mm., 225, 228, 229, 232, 234, 245.

The height of the water in the Idenburg undoubtedly affects the local abundance of this species. In April small parties and single birds were seen flying over the lagoon. They did not frequent the marshes but were feeding along the main river where bits of sand bars or other solid land was exposed, and on the masses of floating timber in eddies in the stream. Of three stomachs examined, one contained insects only; one, insects, shrimps and a small frog; and the third, insects and frogs. Some April and May specimens showed some enlargement of gonads, but none was in breeding condition.

Butorides striatus idenburgi Rand

Butorides striatus idenburgi RAND, 1941, Amer. Mus. Novitates, No. 1102, p. 1—Bernhard Camp.

Bernhard Camp: 2 ♂ ad., 1 ♂ imm., 5 ♀ ad., 1 ♀ imm., 1 sex? imm.; March 22–April 27.

Found at 50 meters altitude.

WING.—♂ ad. 174 mm., 181; ♀ ad. 175, 176, 176, 177, 181.

The little green heron was fairly common about the lagoon by Bernhard Camp where I found it solitary, perched low in the dense shrubbery along the flooded shores of the main lagoon. Startled by the approach of the canoe, they sprang into the air with low squawks and flew low over the water to alight in a similar place ahead. Three April specimens were in breeding condition.

Cosmerodius albus modestus (Gray)

Bernhard Camp: 1 ♀; April 16.

Sentani: 13 sex?; October 20–March 30.

Found at 50 meters altitude.

WING.—♀ 349 mm.

The big egret was not uncommon about the lagoon at Bernhard Camp where it fed on the areas of floating grass mats and on shallow places along the river. However, it was wary and difficult to secure. The April specimens showed no indication of breeding.

Mesophoyx intermedia plumifera
(Gould)

Bernhard Camp: 2 ♂, 3 ♀; March 21–April 30.

Sentani: 4 sex?; November 5–December 5.

Found at 50 meters altitude.

WING.—♂ 279 mm., 286; ♀ 274, 286.

These all have long ornamental plumes. This egret was common about the floating mats of vegetation of the Bernhard Camp area. There is evidently a change in color of the soft parts at the time of breeding, when pinkish color suffuses parts of the yellow areas. A March female was in breeding condition; a March male and female and a May female showed some enlargement of gonads; one March male was not breeding.

Egretta garzetta nigripes (Temminck)

Bernhard Camp: 2 ♀; March 21, 23.

Sentani: 1 sex?; November 6.

Found up to 50 meters altitude.

WING.—♀ 244 mm.

Contrary to the habitat preferences of this egret on the Fly River, about Bernhard Camp I found it feeding fairly commonly on the floating beds of grass along the edges of the lagoon. The April specimens showed no indications of breeding.

Demigretta sacra sacra (Gmelin)

Hollandia: 1 ♂, 1 sex?; July 6.

WING.—♂ 281 mm.

Both are in the dark phase with a white area in the chin.

Nycticorax caledonicus hilli Mathews

Bernhard Camp: 1 sex? subad.; April 20.

Sentani: 2 sex? subad.; November 21, December 5.

Found up to 50 meters altitude.

WING.—sex? 262 mm., 276, 285.

Zonerodius heliosylus (Lesson)

Bernhard Camp: 2 ♂ ad., 1 ♂ imm., 2 ♀ ad.; April 23–May 6.

Found at 50 meters altitude.

WING.—♂ 302 mm., 304, 310; ♀ 290, 291.

One male and two females show only minor variations in the broad black and narrow buffy to whitish barring of the upperparts, and the narrow whitish markings in the wing. The other two males, one of which appears to be immature, have the upperparts with ferruginous barring about as wide as the dark barring, and buffy ferruginous markings on the remiges; one has the crown black; the other has it barred black and buffy. That this is the immature plumage is possible but doubtful.

This heron appears to feed singly along small waterways in the forest. One stomach contained insects and a lizard; another, insects and a crab. A nest found April 26 was a rather bulky, substantial structure of dead sticks and twigs about forty feet up in the branches of a tree in light forest on the edge of a wooded stream about thirty yards wide. It contained one young. I flushed the bird from the nest and had to wait more than an hour for it to return. It

proved to be a male. The nest contained a single young, with pin feathers just breaking their sheaths at the tips. Most of the quills carried short, yellowish white down at their tips, so that the young bird still had a downy appearance. It had a small white egg tooth. A May female was the only other bird in breeding condition.

***Ixobrychus sinensis* (Gmelin)**

Bernhard Camp: 1 ♂ ad., 3 ♀ ad.; March 19-21.

Sentani: 2 sex? imm.; November 5, 20. Found up to 50 meters altitude.

WING.—♂ 134 mm.; ♀ 130, 130, 133.

The flooded condition of the marshes bordering the lagoon at Bernhard Camp made it easy to secure these birds which were common there. They were restricted to the tops of the floating grass clumps still projecting above the water, and by forcing a canoe through these islets the birds were startled into flight. None showed any enlargement of gonads.

***Dupetor flavicollis gouldi* (Bonaparte)**

Bernhard Camp: 6 ♂ ad., 1 ♂ imm., 2 ♀ ad.; March 19-May 2.

Sentani: 13 sex?; October 30-December 7.

Found up to 50 meters altitude.

WING.—♂ ad. 206 mm., 207, 212, 217, 219, 221; ♀ 213, 220.

This was a fairly common species about Bernhard Camp. It was found singly along the wooded edges of streams and marshes, and when alarmed flew to alight in the edges of forest. I never found it in an open marshy area. One stomach examined contained fish. Two nests were collected on May 2. One was about six feet up in the fork of a small tree in tall, shady, flooded forest; the tree was about 100 yards from the lagoon edge. The other nest was about six feet up near the top of a clump of very shrubby trees in a line of similar trees in an area of flooded second growth and marsh grass. Another nest, seen several times in April, was on a flat fork of a tree leaning over a narrow stream flowing through the forest. This nest was quite unconcealed. The nests were rough, fairly substantial structures of sticks and

slender woody vines. One nest contained one young; one contained two eggs. A male was shot at one nest, a female at another, indicating that both sexes share nest duties.

March (1), April (1) and May (2) birds were in breeding condition.

***Threskiornis moluccus* (Cuvier)**

The only time I saw this species was on May 2 when two birds circled high over the lagoon near Bernhard Camp. The water was high, covering all the places where they might have fed, and it is probable that under conditions of low water this ibis might be locally common.

***Dendrocygna guttata* Schlegel**

Bernhard Camp: 5 ♂, 1 ♂ downy young, 3 ♀, 1 ♀ downy young; March 19-22.

Sentani: 9 sex?; November 6-December 5.

Found up to 50 meters altitude.

WING.—♂ 197 mm., 205, 208, 210, 210; ♀ 201, 203, 210.

This was the only duck found at Bernhard Camp, where it was common. It was usually found in pairs or small parties, resting on little floating islands or logs in the grassy margins of the lagoon. Broods of small young accompanied by the adult were seen in similar places. A tall dead tree in the camp clearing was a favorite roosting place, and each evening in April and May, at dusk and until it was too dark to see, small parties of ducks came in to perch there, until several dozen birds had congregated.

One bird had its gullet filled with grass seeds. Two females and four males taken in March were in breeding condition, and small downy young were also found in March.

Anas superciliosa pelewensis

Hartlaub and Finsch

Hollandia: 2 ♂, 1 ♀?; July 8, August 1.

Sentani: 7 sex?; October 20-December 8.

Balim River Camp: 2 ♂, 1 ♀; December 9, 11.

Habbema Lake: 6 ♂, 6 ♀; August 1–September 20.

Mt. Wilhelmina, 7 km. northeast: 7 ♂, 2 ♀; August 29–September 20.

Found up to 3,600 meters altitude.

WING MEASUREMENTS					
Altitude	Male			Female	
3,600 meters	227 mm.,	241,	232,	235	
	242, 243,	246,			
	247, 251				
3,225 "	226, 236,	242,	215,	218,	220,
	246, 246			226,	227, 230
1,600 "	235, 236		223		
Near sea level	224, 237	(sex?	211, 214, 221,		
			221, 224, 226, 230)		

The birds from the higher altitudes average larger than lower altitude birds; this appears to be another example of increase in size with increase in altitude. The Australian race *rogersi* is distinguished from *pelewensis* by its larger size. The higher altitude birds approach *rogersi* in size. A review of the species may show that it will be necessary to include them in that race.

This duck was common on Lake Habbema, being found usually in pairs swimming along near the lake shore or in the beds of grass. At the 3,600-meter Camp it was fairly common in the little shallow ponds. On the Balim River several pairs were seen feeding in an eddy of the river or resting on a gravel bar above it at the water's edge. Birds in breeding condition were taken in August (8), September (1) and December (3).

Anas gibberifrons mathewsi Philips

Lake Habbema: 1 ♂, 1 ♀; August 30.

Found only at 3,225 meters altitude.

WING.—♂ 202 mm., ♀ 196.

These are assigned to this race on the basis of larger size.

This species has not been taken in New Guinea in recent years and apparently never in Netherlands New Guinea. For early records, see Salvadori, 1882, Ornith. della Papuasie e delle Molucche, III, pp. 396, 398.

These two ducks, taken by a boy, were said to have been in the outlet stream of Lake Habbema.

Salvadorina waigiensis

Rothschild and Hartert

Mt. Wilhelmina, 4 to 7 km. east: 3 ♂, 2 ♀; August 16, 31.

Lake Habbema: 7 ♂, 8 ♀; July 16–September 3.

Bele River Camp: 2 ♀; November 20, 28.

Balim River: 1 ♀; December 9.

Bernhard Camp, 4 km. southwest: 1 ♂, 2 ♀; March 8, 15.

Found from 850 to 3,700 meters altitude.

WING MEASUREMENTS		
Altitude	Male	Female
3,600–3,700 meters	191 mm., 192,	184, 192
	195	
3,225 meters	179–200	176–194
2,200 "		181, 184
1,600 "		179
850 "	194	182, 184

This series is fairly uniform, with only slight variation in spotting and reddish wash below, except for one specimen, a female from Lake Habbema (August 29), which is melanistic. It has the whole underparts brownish black, the feathers barred and tipped with buffy or whitish instead of being whitish below, with spotting in the throat, sides of the breast and abdomen; the flanks are black, white-barred as is normal; the under tail coverts are brownish black, white-barred, not whitish; the under wing coverts and axillaries are plain blackish, instead of white and grayish black; the upper wing coverts are blackish, with a few whitish margins instead of with conspicuous white margins, and there are no white bars on each side of the speculum as is usual. On the upperparts this bird differs from the rest of the series chiefly in having the white bars slightly narrower.

The mountain duck was common at Lake Habbema, singly or in pairs frequenting the shores, along the margins of which it fed; on ponds and lakes it was found up to 3,700 meters, and duck tracks found on the margin of a pond at about 4,000 meters were almost certainly made by this species. On the Bele River it was occasionally seen but was rare at the Balim Camp. On the stream at the 850-meter Camp, *Salvadorina* was fairly common. It

was usually found in the pools and when alarmed would either fly or swim away through the small rapids.

***Nyroca australis* Eyton**

Lake Habbema: 2 ♂ ad., 1 ♂ imm.; August 2.

Found only at 3,225 meters altitude.

WING.—♂ ad. 220 mm., 221; ♂ imm. 215.

This species had been recorded but once before from New Guinea. Rothschild and Hartert (1894, Nov. Zool., I, p. 683) mention three specimens in a collection from Waigeu and New Guinea. Compared with a series of fifteen males from various parts of Australia, the New Guinea specimens are darker, more blackish on the upperparts, darker on the flanks, and the head is darker, more brownish with less of a lilac tinge. More material substantiating these differences may necessitate separating the New Guinea birds.

For most of our stay at Habbema there were several hundreds of these ducks in flocks, usually well out in the lake where they fed by diving. They were shy, and it was difficult to secure specimens. The three collected were secured by having a boat chase them until a flock flew by a point on which I was concealed. None was seen elsewhere. The August specimens showed no indication of breeding.

***Aviceda subcristata megal*
(Stresemann)**

Bernhard Camp: 1 ♀; April 30.

Hollandia: 1 ♂, 2 ♀; July 12–November 28.

Found up to 50 meters altitude.

WING.—♂ 312 mm.; ♀ 317, 319.

This was an uncommon bird. Three stomachs examined contained insects. The July and November specimens showed no indication of breeding.

***Henicopernis longicauda longicauda*
(Garnot)**

Bernhard Camp, 4 km. southwest: 1 ♂; March 4.

Bernhard Camp: 1 ♂; April 25.

Cyclops Mountains: 1 sex?; April 31.

Found up to 850 meters altitude.

WING.—♂ (50 meters) 401 mm., (850 meters) 414.

This hawk was a scarce bird. Of two stomachs examined, both contained insects. The March and April specimens showed no indications of breeding.

***Milvus migrans affinis* Gould**

Sentani: 1 sex?; March 29.

Found near sea level.

WING.—380 mm.

This specimen was purchased from Mr. Ebeli. The kite is evidently rare or local in New Guinea as I have never seen it in life.

***Haliastur indus girrenera* (Vieillot)**

Balim River Camp: 2 ♂ ad., 1 ♀ imm.; December 9, 13.

Bernhard Camp: 3 ♂ ad.; March 20–April 17.

Cyclops Mountains: 1 sex? ad.; October 24.

Hollandia: 1 sex? imm.; October 18.

Found up to 1,600 meters altitude.

WING MEASUREMENTS

Altitude	Male ad.
1,600 meters	363 mm., 364
50 "	350, 351, 354

This was a common species about the open ground, river margins and seashore. Of three stomachs examined, two contained insects only, and one, the remains of a rodent, several frogs and many large insects. The March, April and December specimens showed no indications of breeding.

***Haliastur spheunus* (Vieillot)**

Cyclops Mountains: 2 sex?; October 7–17.

Sentani: 3 sex?; October 9–12.

Bernhard Camp: 2 ♀; January 4, March 21.

Found at 50 meters altitude.

WING.—♀ 404 mm., 404.

The whistling kite was only fairly common about the waterways and second growth at Bernhard Camp.

Accipiter novaehollandiae leucosomus
(Sharpe)

Balim River Camp: 1 ♀ ad.; December 15.

Bernhard Camp: 3 ♂ ad., 1 ♀ ad.; April 17, 30.

Sentani: 1 ♂ ad., 1 ♀ imm.; December 13, March 24.

Cyclops Mountains: 2 ♀? imm.; October 13.

Hollandia: 1 ♀ ad.; July 5.

Found up to 1,600 meters altitude.

WING.—♂ ad. 206 mm., 209, 213; ♀ ad. 236, 242, 254; ♀ imm. 245.

The Sentani male is in the white phase of plumage, the only one seen; the immature female is in the rufous plumage. The Balim River female has an indication of barring on the abdomen; the others are unbarred. There is considerable variation in the amount of gray in the throat; some specimens have the under wing coverts barred, some have them unbarred. This series averages slightly darker below than south and east New Guinea birds.

Not an uncommon hawk along the Idenburg marshes and lagoon, usually seen flying directly across or circling about low over the marshes. In appearance it is rather more bulky in outline than many accipiters. One bird I collected after watching it hover over a bed of marsh grass, drop into it and repeat the process several times. The bird's stomach was empty, and there were a number of weaver birds skulking in the grass, which the hawk was probably trying to catch. Of four stomachs examined, one contained insects; two, small mammal remains, and one, the remains of a small passerine bird. Three of the females had a right ovary present; in one of them it was equal in size to the left. None of the specimens was in breeding condition.

***Accipiter poliocephalus* Gray**

Cyclops Mountains: 1 ♀?; April 7.

WING.—226 mm.

Accipiter melanochlamys schistacinus
(Rothschild and Hartert)

Lake Habbema, 9 km. northeast: 1 ♂ ad., 1 ♀ ad.; October 24–November 3.

Bernhard Camp, 18 km. southwest: 1 ♂ ad., 2 ♀ ad.; February 6–8.

Found between 2,150 and 3,000 meters altitude.

WING.—♂ ad. 220 mm., 221; ♀ ad. 252, 258, 261.

This is another rare New Guinea species in 1940 (Amer. Mus. Novitates, No. 1056, p. 11) Mayr listed but thirteen other known specimens.

This hawk apparently lives almost entirely within the forest. Those collected were the only ones seen. The stomach of one bird contained remains of a large frog. Two of the females had a right ovary present, about as large as the left. None was in breeding condition.

***Harpyopsis novaeguineae* Salvadori**

Bernhard Camp, 6 km. southeast: 1 ♀ ad.; February 13.

Found at 1,200 meters altitude.

WING.—476 mm.

This was the only one seen. It had a small right ovary present.

Hieraaetus morphnoides weiskei
(Reichenow)

Balim River Camp: 1 ♀ ad.; December 9.

Bernhard Camp: 1 ♀ ad.; April 17.

Found at 50 and 1,600 meters altitude.

WING.—♀ ad. 337 mm., 342.

This is one of the rarest New Guinea hawks. Stresemann (1924, Jour. für Ornith., LXXII, p. 228) listed only six specimens in existence, from the Huon Peninsula, southeast New Guinea and the Utakwa River. A locality he did not list is the Hydrographer Range, where the Eichhorn brothers secured an adult female, March 11, 1918, which is now in the American Museum. Compared with two eastern New Guinea birds (♂ Aroa River, wing 306 mm., ♀ Hydrographer Range, wing 326) the present birds are much more heavily streaked below and have the crown and nape much darker, lacking pale edgings to the feathers. One specimen has the general ground color of the underparts tawny; the other has it whitish.

The Bernhard Camp specimen was brought in by a shooting boy; the Balim

River specimen I shot from the top of a dead stub in the scanty *Casuarina* forest fringing a small stream flowing through open grass country. One female had a small right ovary present. The April female was in breeding condition.

***Haliaeetus leucogaster* (Gmelin)**

Bernhard Camp: 1 ♀ ad., 1 ♀ sub-adult; March 21, 23.

Sentani Lake: 1 sex? ad.; December 13. Found up to 50 meters altitude.

WING.—♀ ad. 605 mm.

The sea eagle was fairly common about the larger waterway near Bernhard Camp.

Circus spilonotus spilothorax

Salvadori and D'Albertis

Lake Habbema: 1 ♀ ad.; August 11.

Balim River: 1 ♂ ad., 1 ♀ ad.; December 7, 14.

Found at 1,600 and 3,225 meters altitude.

WING.—♂ 378 mm.; ♀ 400, 405.

I have recorded this series and discussed the validity of this race elsewhere (1941, Amer. Mus. Novitates, No. 1102, p. 1).

Of two stomachs examined, one contained a small mammal; the other, fragments of a Macgregor's bird of paradise (*Macgregoria*). Both females had a right ovary present. None was in breeding condition.

Pandion haliaetus melvillensis

Mathews

Bernhard Camp: 1 ♂; April 12.

Sentani: 1 sex?; November 3.

Found up to 50 meters altitude.

WING.—♂ ad. 407 mm.

Very few fish hawks were seen on the Idenburg River. The April male had enlarged gonads.

***Falco cenchroides baru* Rand**

Falco cenchroides baru RAND, 1940, Amer. Mus. Novitates, No. 1072, p. 1—11 km. north-east of Mt. Wilhelmina.

Mt. Wilhelmina, 11 km. northeast: 1 ♂ ad., 1 ♀ ad., 1 nestling; September 6.

Lake Habbema: 2 ♂; August 6, 16.

Found between 3,225 and 3,800 meters altitude.

WING.—♂ 254 mm., 259, 262; ♀ 268.

This little falcon was an uncommon bird, usually seen flying over the alpine grassland or occasionally perched on some conspicuous perch. It favored especially the vicinity of cliffs, on which it presumably nested. One such nest was found on September 6. It was about two-thirds of the way up the cliff-like side of a large sink hole, about forty yards deep, in grass country. The nest itself was on a ledge of rock. It contained one well-grown young, and both parents were in attendance. The female had a right ovary present, about one-half the size of the left. Of three stomachs examined, two contained lizards, and one, insect remains.

Ieracidea berigora novaeguineae

Meyer

Bele River Camp: 1 ♀, 1 sex?; November 11, 25.

Balim River Camp: 1 ♀; December 15.

Found between 1,600 and 2,200 meters altitude.

WING.—♀ 358 mm., 370.

This hawk was found only in the Balim and Bele valleys, where it was fairly common and conspicuous, flying about over the open country, perching in the tops of tall trees and frequently giving its loud calls. It was, however, wary and difficult to secure. One stomach examined contained a small rodent. One female had two ovaries present. None was in breeding condition.

***Megapodius freycinet affinis* Meyer**

Bernhard Camp, 6 km. southwest: 1 ♂, 1 ♀; February 28.

Bernhard Camp: 7 ♂, 3 ♀; March 23–May 3.

Hollandia: 1 ♂, 2 ♀; June 26–November 5.

Found from sea level up to 1,200 meters altitude.

WING.—♂ (8) 216–224 mm. (av. 220.6); ♀ 215, 218, 221, 222, 223.

Birds in breeding condition were taken in February (1), March (1) and June (1).

***Talegalla jobiensis jobiensis* Meyer**

Bernhard Camp, 4 km. southwest: 3 ♂, 2 ♀; March 9–April 5.

Bernhard Camp: 1 ♂, 3 ♀; April 12–27.

Cyclops Mountains: 1 sex?; December 17.

Hollandia: 6 ♂, 2 ♀; June 25–November 28.

Found up to 850 meters altitude.

WING.—♂ 255 mm., 255, 273, 277, 290, 292, 296, 298, 307; ♀ 280, 281, 281, 281, 282, 298.

Aepyodius arfakianus (Salvadori)

Bernhard Camp, 6 km. southwest: 3 ♂, 4 ♀; February 16–March 5.

Bernhard Camp, 4 km. southwest: 2 ♂, 3 ♀; March 9–April 5.

Found between 850 and 1,200 meters altitude.

WING.—♂ 260 mm., 261, 263, 266, 268; ♀ 252, 253, 255, 257, 259, 261.

Birds in breeding condition were taken in February, March and April.

Anurophasis monorthonyx van Oort

Mt. Wilhelmina to 7 km. northeast: ♂, ♀; August 30–September 29.

Lake Habbema: ♂, ♀; July 29–November 18.

Found from 3,225 to 4,200 meters altitude.

MEASUREMENTS

	Male	Female
Wing	(10) 157.0–161.0 mm. (av. 158.7)	(10) 151.0–162.0 (av. 156.3)
Tail	(10) 61.0–70.0 (av. 66.9)	(10) 64.0–69.0 (av. 66.9)
Exposed culmen	(10) 17.5–18.5 (av. 18.1)	(10) 16.0–18.5 (av. 17.1)
Tarsus	(10) 42.0–45.0 (av. 43.5)	(10) 40.0–43.0 (av. 41.8)

This genus has been known only from the single male collected on Mt. Wilhelmina in 1909 and described by van Oort (1910, Notes Leyden Mus., XXXIII, p. 212) and figured in Nova Guinea (1937, [N.S.] I, Pl. 1). Peters (1934, Check-list of Birds of the World, II, p. 68) has placed *Anurophasis* between *Francolinus* and *Alectoris*. To me it seems more closely related to *Synoisus*.

In the present series the barring of the back is narrower and considerably duller,

less bright rufous than shown in the plate (van Oort, 1937, *loc. cit.*).

The series of males is fairly uniform on the upperparts; on the underparts there is more variation; the general coloration varies from light to deep rufous, and the amount of the barring varies considerably.

A half-grown male taken August 7 at Lake Habbema has the plumage in general similar to that of the adult male but is duller, less rufous both above and below and has the barring of the breast less distinct and more irregular.

The female has the upperparts similar in pattern to that of the male, but the barring less regular and pale olive brownish instead of rufous and the whitish central streaks to the feathers more pronounced, especially on the back of the neck; on the sides of head and neck and the underparts it differs more from the male. The sides of the head are buffy white, each feather with a black mark on each edge of the tip; the throat is buffy white or tinged with rufous, each feather with a small black mark on each side of the tip; the upper breast is heavily and irregularly marked with black, pale brown and white; on the lower breast the markings tend more toward regular barring; the flanks are brownish white, more or less tinged with rufous, with bold black barring; abdomen brownish gray with fine, indistinct barring; under tail coverts whitish barred with black. There is some variation in the upperparts in the distinctness of the barring and extent of the white markings, and in the underparts in the amount of rufous tinge in the flanks, but the series is fairly uniform.

A chick (sex?) taken at Lake Habbema November 18, 1938, has the wing, breast and back feathers coming in but still bears considerable downy plumage. The down of the forepart of the crown is mixed black and pale rufous brown; from this two longitudinal stripes run back to the nape, the down between being pale rufous; above the eye it is pale brownish rufous, with a black spot in front of the eye; below the eye is a black stripe running back to the auricular area; the down of the chin, throat and lower cheeks is grayish white tipped with blackish. The down borne on

the feathers of the back, rump, upper tail coverts, upper wing coverts and secondaries is dark gray tipped with rufous; the down of the underparts is dark gray tipped with buffy white; thighs dark gray, the down with brownish white tips.

A nest with three eggs was found two kilometers east of Mt. Wilhelmina September 29, 1938. The eggs are broadly ovate, shell fairly smooth with slight gloss, general color pale brownish with small spots and dots of dark chocolate scattered fairly plentifully over the egg. Two of them measure 33.5 by 48.5 mm. and 33 by 45 mm.

The color of soft parts: male adult, iris dark brown, bill horn, yellow at base, feet yellow, nails grayish; female, iris dark brown, bill olive horn color, base and tomium more yellowish, feet dull yellow, toes tinged with olive, nails gray; half-grown male, iris brown, bill dull yellow tinged with olive toward tip, feet dull yellow.

The nest was a little hollow about 70 mm. deep in the ground with a rather substantial pad of dead grass about 170 mm. across for a lining. This was placed in a well-concealed position under the edge of a large spreading tussock of grass in an area of mixed tall grass and low shrubs about twenty-five yards from the forest edge. The female was flushed from the nest and shot.

This quail was fairly common from timber line to the upper edge of the grass and frequently six to ten were seen in a morning's excursion.

Near timber line the bird was found in and about the areas of tall grass and areas of grass and shrubbery but not venturing into the forest; above timber line, tall dense grass provided cover in which it hid and apparently slept. It favored, however, more open places to feed; about Habbema it was commonly found on rather barren ridges with sparse short grass and scattered shrubs when these adjoined the denser cover mentioned above, and in swales where, in the midst of tall grass, there occurred little swampy areas with an herbaceous growth and grass but an inch or so high.

The quail was found singly, though perhaps more often in twos and threes. It flushed noisily, with a whirl of wings and frequently with a shrill cackling call; this call was given by the female as well as the male. Frequently, when in pairs, the female flushed some few moments before the male. Sometimes the birds flushed at a distance of 100 yards or more. More often they lay close and often flushed within a few yards of me.

They usually flew to denser cover, especially the edge of timber or shrubbery if available. They usually do not fly far but are very difficult to flush a second time. Once at 4,200 meters near the upper edge of grassland during a snow storm, a bird flushed and flew out over the bare rock slope that led upward. It alighted on the rock about 150 yards beyond and wandered about aimlessly for a time.

Several times I saw birds standing on the ground at close range. On one occasion a male near me on the ground, alarmed, gave a low muffled call repeated a number of times. They run rapidly but usually resort to flight to escape.

This bird apparently sleeps in "forms" made by the bird in the moss about the base of a shrub or in a dense tussock of grass. The best example of this was where a tussock of moss-grown sedge had been hollowed out, apparently by the bird's pecking out the materials, to form a cave sixteen inches wide by twelve inches deep by nine inches high, with an opening seven inches by ten inches wide. This had evidently been used many times, judging by the amount of droppings and feathers deposited there. The size of the "form" suggested that the two or three birds usually seen together during the day may have slept together during the night. Once, during a snow storm at 4,200 meters, I flushed three birds from under a little rock ledge where they had apparently taken shelter.

On the 18th of November at Habbema Lake I collected a male and female which were accompanied by young. The two birds appeared in the track walking quietly ahead of me, heads held high, a few yards apart. It was only after I shot them that I

found one downy chick which started to run from underfoot.

Food is varied and depends on the habitat in which the birds feed, as the following list of crop contents shows, with the number of times the item was recorded in different birds: flower heads of a buttercup (recorded once), flower heads of a composite, two species (once), flowers of a *Myrmecodia* (once), leaves of small herbaceous plants (five times), leaves of a *Vaccinium* (twice), fruit of a *Vaccinium* (twice), seeds of some other shrubs (twice) and seeds of a sedge (three times). A half-grown bird had eaten a caterpillar. Fine white gravel was usually present in the stomach.

Excalfactoria chinensis novaeguineae
Rand

Excalfactoria chinensis novaeguineae RAND, 1941, Amer. Mus. Novitates, No. 1122, p. 1—1,600 meters on the Balim River, Snow Mountains.

Bele River Camp: 4 ♂ ad., 6 ♀ ad.; November 9–December 2.

Balim River Camp: 8 ♂ ad., ♂ chick, ♀ ad., ♀ chick; December 12–18.

Found from 1,600 to 2,200 meters altitude.

WING.—♂ (10) 61–68 mm. (av. 65.6); ♀ (10) 65–70 (av. 67).

The little quail favored especially old garden land that had grown up to weeds. At the Balim River Camp it was one of the few birds brought in commonly by the natives. Birds in breeding condition were taken in November (2) and December (12).

Rallus pectoralis alberti
(Rothschild and Hartert)

Bele River: 1 ♂ ad.; November 14.

Found at 2,200 meters altitude.

WING.—97 mm. CULMEN.—37.

In color the specimen differs from two males of *alberti* (including the type) from southeast New Guinea (wing 95 mm., 95; bill 32, 33) in having darker gray lores and cheeks, darker red-brown crown, and the olive brown of the back, wing coverts and inner secondaries more tinged with red-brown. The bill is considerably longer. If more material shows these differences to be

constant, the Snow Mountain bird will have to be separated. The only approach toward the larger, long billed, duller colored *mayri* from Arfak is in the longer bill.

Rallus philippensis australis
(Pelzeln)

Lake Habbema: 1 ♂, 1 ♀; August 17, 23.

Mt. Wilhelmina, 7 to 9 km. northeast: 1 ♂, 1 ♀, 1 sex?; August 26–September 5.

Found from 3,225 to 3,400 meters altitude.

MEASUREMENTS

	Male	Female
Wing	154.0 mm., 155.0	139.0, 149.0
Tail	65.0, 67.0	—, 62.0
Bill	31.5, 32.0	27.0, 27.5
Tarsus	44.0, 44.5	39.0, 41.0

The males differ slightly from *australis* males from New South Wales in the paler upperparts with less black and fewer white spots in the upper back, in the more sharply defined white throat, in the reduction of the pectoral band, which is incomplete in one male, the paler coloration of the band, and the longer tarsus. The two females differ, however, only slightly from New South Wales females in the lesser white spotting of the upper back.

This species was apparently most common in the country between Lake Habbema and the 3,600-meter Camp; all but one of the five secured were shot on trips between these camps. One was walking about on the mud of a dried-up pool in an area of tall grass. It ran into the grass at my approach and was easily flushed. Two flushed from the track through grass and second growth areas; one was running about the tussocks of grass in a boggy place.

Porzana tabuensis tabuensis (Gmelin)

Balim River Camp: 3 ♂, 2 ♀, 1 sex?, 1 downy young; December.

Found only at 1,600 meters altitude.

WING.—♂ 76 mm., 78, 83; ♀ 77, 80; sex? 78.

This species has twice been recorded from New Guinea: once from Bongu, Astrolabe

Bay; and a series from Arfak (Hartert, 1930, Nov. Zool., XXXVI, p. 122).

The present series compares well with a large series of Pacific islands birds in both size and color except that the bill of the New Guinea series averages slightly smaller, but it is a slight difference. Hartert (*loc. cit.*) was unable to allocate his series from Arfak as to subspecies, but the measurements fall within the range of those of *tabuensis*. The Arfak series appears slightly lighter colored above than the Balim River series but is best included with it in *tabuensis*. For measurements see under the next form.

Murphy (1924, Amer. Mus. Novitates, No. 124, p. 4) described the first down of the chick as glossy greenish black with a narrow white stripe on chin and throat. Reexamination of his material shows that this white stripe is composed of incoming feathers of the juvenal plumage. Downy young of both Pacific islands and New Guinea birds are completely glossy greenish black.

Most of these specimens were taken in mouse traps set in areas of grassy marsh.

Porzana tabuensis richardsoni Rand

Porzana tabuensis richardsoni RAND, 1940, Amer. Mus. Novitates, No. 1072, p. 3—Lake Habbema.

Lake Habbema: 7 ♂, 8 ♀; July 28–August 25.

Bele River Camp: 1 ♂; November 16.

Collected at 3,225 meters altitude; one specimen brought in at 2,200-meter Camp undoubtedly came from a higher altitude.

WING.—♂ 83 mm., 83, 83, 84, 84, 86, 86, 88; ♀ 80, 80, 82, 83, 83, 83, 87, 89.

This little rail was a common species in the marshes along the lake shore. Mr. Richardson took many specimens in mouse traps set in such places, but they were occasionally seen darting from one clump of grass to another. Sometimes one could be forced into a short flight. Their calls, often heard, were a sharp "kip" or "kup" repeated a number of times, and a low "bu-u-u-u." Several August specimens were in breeding condition.

Poliolimnas cinereus minimus (Schlegel)

Bernhard Camp: 9 ♂, 9 ♀; March 19–April 28.

Found at 50 meters altitude.

WING.—♂ (8) 90–92 mm. (av. 91); ♀ (7) 87–90 (av. 88.3).

These agree with a south and a south-east New Guinea bird and differ from a series of northwest Australian *leucophrys* in the characters given in "Birds of the 1936–1937 New Guinea Expedition."¹

This rail was fairly common in the dense mats of floating grass. The high water conditions, leaving just the tops of these grasses exposed and restricting their area, facilitated collecting. The birds were never seen until a canoe, forced through the grass, made them fly.

Rallacula rubra subrubra Rand

Rallacula rubra subrubra RAND, 1940, Amer. Mus. Novitates, No. 1072, p. 3—Lake Habbema, 9 km. northeast.

Lake Habbema, 9 km. northeast: ♂ ad., ♂ imm., ♀ ad.; October 7–November 7.

Bele River Camp: ♂ ad., ♂ imm., ♀ ad., ♀ imm.; November 11–20.

Found from 2,200 meters to 2,800 meters altitude.

WING.—♂ (10) 94–100 mm. (av. 97.5); ♀ (10) 93–102 (av. 97.8).

One male has a plumage in general like that of the other adults, but the upper wing coverts are edged with blackish, and some of those and the inner secondaries show obscure spotting. One male largely clothed with the sooty black juvenal plumage has the upper and under tail coverts barred with black, and the rufous tail has some irregular barring.

The females exhibit considerable variation in the color of the upperparts. In some specimens the light markings on the mantle are white; in others, yellowish to rust colored; in others, partly white and partly yellow, in which case the anterior markings are usually the white ones; the markings may be all spots, which vary in abundance, or many of the feathers of the fore part of the mantle may have light streaks, one on each side of the feather, in-

¹ 1942, Bull. Amer. Mus. Nat. Hist., LXXIX, pp. 289–366.

stead of spots. In some specimens the mantle, in addition to being black with white or yellow spots and streaks, has sparse rufous spotting and edgings to the feathers, especially on the posterior part of the mantle. A few apparent adults have some barring on the upper tail coverts and indistinct barring on the tail. One immature female has distinct barring on the tail, while another in similar plumage has little.

Most of these specimens were brought in by natives. Many of the October and November specimens were in breeding condition.

***Rallicula forbesi steini* Rothschild**

Bele River Camp: 1 ♂ ad.; November 15.

Collected at 2,200 meters altitude.

WING.—115 mm. BILL.—29. TAIL.—68. TARSUS.—36.

I have assumed that this is the male of *steini*, which was described on the basis of a single female from the Weyland Mountains. This male differs from a large series of *forbesi* in the white barring and white tips of the feathers of abdomen and thighs; the general rufous coloration is dark, perhaps slightly darker than the darkest *forbesi*. There is some barring in the rectrices, and upper and under tail coverts are barred. The race *dryas*, of which I have not seen specimens, appears to be smaller. Wing: ♂ 104–111 mm., ♀ 101–109 (Mayr, 1931, Mitt. Zool. Mus. Berlin, XVII, p. 709).

While at the Bele River Camp the natives showed me almost a hundred examples of *Rallicula* of which all but this specimen were *rubra*.

***Rallina tricolor tricolor* Gray**

Bernhard Camp: 1 ♂, 1 ♀; April 29, May 5.

Cyclops Mountains: 2 sex?; December 5, 12.

Found up to 50 meters altitude.

WING.—♂ 141 mm.; ♀ 135.

Gymnocrex plumbeiventris

***plumbeiventris* (G. R. Gray)**

Hollandia: 1 ♀; July 13.

Taken near sea level.

***Megacrex inepta pallida* Rand**

Bernhard Camp: 1 ♀; March 21.

Found at 50 meters altitude.

WING.—174 mm.

This agrees with the type.

This specimen was in breeding condition.

***Amaurornis olivaceus frankii* (Schlegel)**

Bernhard Camp: 1 ♂ ad., 1 ♀ ad.; April 25.

Found at 50 meters altitude.

WING.—♂ 138 mm.; ♀ 135.

These compare well with an Arfak bird. The races *moluccana*, *frankii* and *nigritrona* differ only slightly from each other. Mayr (1938, Amer. Mus. Novitates, No. 1007, p. 11) has synonymized *frankii* with *moluccanus*, but in comparing the available New Guinea material with three Moluccas specimens the New Guinea bird appears sufficiently darker above and below to keep separate.

This appears to be a shy, secretive bird. The two individuals collected were giving low, harsh, croaking calls and climbing about in a dense stand of low shrubs in a deeply flooded area fringing the lagoon. Neither was in breeding condition.

***Gallinula tenebrosa neumanni* Hartert**

Lake Sentani: 8 sex?; October 26–December 5.

WING.—170 mm., 171, 175, 176, 176, 179, 183, 188.

These are topotypical.

Porphyrio poliocephalus melanopterus

Bonaparte

Bernhard Camp: 3 ♂, 5 ♀; March 21–May 3.

Found at 50 meters altitude.

WING.—♂ 231 mm., 237, 238; ♀ 221, 222, 224, 229, 230.

There is some variation in this series in the intensity of the blue in the throat. A single female from Ceram (type locality), wing 230 mm., falls within this range of variation.

These eight birds were all I saw in the marsh. They were collected over a period of several days in an area of dense, floating grass mats where the birds sat up on little platforms they made by breaking down the

tops of the grass. Thus they were conspicuous birds. One male and two females were in breeding condition.

Fulica atra novaeguineae Rand

Fulica atra novaeguineae RAND, 1940, Amer. Mus. Novitates, No. 1072, p. 4—Lake Habbema.

Lake Habbema: 4 ♂ ad., 1 ♂ imm., 6 ♀ ad., 1 ♀ imm., 4 sex?; July 15–August 29.

Collected at 3,225 meters, seen at 3,700 meters altitude.

WING.—♂ ad. 200 mm., 206, 211, 212; ♀ ad. 190, 191, 191, 194, 200, 202.

The coot was common on Lake Habbema and fairly so at a little lake at 3,700 meters. One male and two females were in breeding condition.

Irediparra gallinacea novae-guineae (Ramsay)

Bernhard Camp: 2 ♂ ad., 1 ♂ imm., 3 ♀ ad.; March 20–25.

Sentani Lake: 4 ♂? ad., 5 ♀? ad., 1 sex? imm.; October 30–December 8.

Found up to 50 meters altitude.

WING.—♂ 122 mm., 127; ♀ 141, 142, 146.

At Bernhard Camp the jacana was scarce and found only on one corner of the lagoon, where the floating grass was open, and there were a few lily pads. Three of the specimens were in breeding condition.

Pluvialis dominica fulva (Gmelin)

Balim River Camp: 5 ♂; December 9, 11.

Found at 1,600 meters altitude.

WING.—♂ 166 mm., 167, 168, 170.

Limosa lapponica baueri Naumann

Sentani Lake: 1 sex?; October 30.

WING.—211 mm.

Actitis hypoleucos (Linnaeus)

Habbema Lake: 1 ♂; August 24.

Balim River Camp: 1 ♂, 1 ♀; December 13.

Bernhard Camp, 4 km. southwest: 1 ♂; March 15.

Bernhard Camp: 1 ♂, 1 ♀; April 29.

Found up to 3,225 meters altitude.

WING.—♂ 105 mm., 108, 109, 110; ♀ 110.

Capella megala (Swinhoe)

Mt. Wilhelmina, 7 km. northeast: 1 ♂, 1 ♀; September 22, 28.

Lake Habbema: 1 ♂, 4 ♀; September 30–October 8.

Balim River: 1 ♂, 1 ♀; December 13.

Found from 1,600 to 3,600 meters altitude.

WING.—♂ 140 mm., 141, 144; ♀ 139, 140, 140, 141, 143, 143.

The first record was September 22, and in the first part of October the snipe became very common in the little marshes in the alpine grasslands at Lake Habbema. Twenty or thirty birds were often found in a swale only a few hundred yards across. Very few were found in the grasslands of the Balim in December.

Capella hardwickii (Gray)

Mt. Wilhelmina, 6 miles northeast: 1 ♂; August 27.

Found at 3,550 meters altitude.

WING.—161 mm.

I have already reported this first record of the species for New Guinea (1941, Amer. Mus. Novitates, No. 1102, p. 3).

Scolopax saturata rosenbergii Schlegel

Mt. Wilhelmina, 2 km. east: 1 ♂; September 13.

Mt. Wilhelmina, 7 km. east: 1 ♂, 1 ♀; September 14.

Lake Habbema: 6 ♂, 1 ♀; August 15–September 30.

Lake Habbema, 9 km. northeast: 1 ♂, 2 ♀; October 15–November 3.

Bele River Camp: 2 ♂; November 22, December 4.

Bernhard Camp, 15 km. southwest: 1 ♂, 2 ♀; January 1–29.

Found from 1,500 to 3,800 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
3,800 meters	161 mm.	
3,600 "	160	162
3,225 "	155, 155, 158, 161,	169
	164, 167	
2,800 "	161	159, 167
2,200 "	158, 159	
1,800 "		157
1,500 "	160	152

A number of these specimens were taken in mammal traps set in the forest. A few were flushed on the edges of high, isolated clumps of forest. The upward limits of the woodcock's distribution appear to depend on the presence of these forest clumps. One stomach examined contained the two-inch long pupae of a moth. The woodcock's flight song was heard about Lake Habbema in September, and birds in breeding condition were taken in September (1), October (2) and November (1).

***Erolia ruficollis* (Pallas)**

Sentani Lake: 1 sex?; November 6.
WING.—101 mm.

***Erolia acuminata* (Horsfield)**

Sentani Lake: 1 sex?; November 6.
WING.—124 mm.

***Himantopus himantopus* Linnaeus**

No specimens were taken, but on May 3 I saw a solitary stilt on a sand bar on the Idenburg River near Bernhard Camp. During our stay here high water made conditions unfavorable for strand birds.

***Chlidonias hybrida fluviatilis* (Gould)**

Lake Sentani: 1 sex?; November 13.
WING.—228 mm.

***Sterna sumatrana sumatrana* Raffles**

Hollandia: 1 ♀ ad.; July 4.
WING.—219 mm.

***Sterna albifrons sinensis* Gmelin**

Bernhard Camp: 8 ♂, 11 ♀; April 10–May 3.

Found at 50 meters altitude.

WING.—♂ (8) 181–186 mm. (av. 183.1); ♀ (10) 174–180 (av. 177.3).

These compare well with China birds.

The little tern was fairly common over the Bernhard Camp lagoon in April, feeding and flying about over the water in flocks of ten or fifteen. Six of the April specimens were in breeding condition.

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

Hollandia: 1 ♂; July 4.
Found at sea level.
WING.—325+ mm.

***Ptilinopus superbus superbus*
(Temminck)**

Bernhard Camp, 6 km. southwest: 6 ♂, 1 ♀; February 15–March 1.

Bernhard Camp, 4 km. southwest: 3 ♂, 1 ♀; March 12–April 4.

Bernhard Camp: 1 ♀; April 25.

Cyclops Mountains: 2 ♀; April 2.

Hollandia: 7 ♂, 1 ♀; June 22–July 16.

Found from sea level to 1,200 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
1,200 meters	127 mm., 127, 130, 130, 133, 141	130
850 "	127, 128, 132	126
Near sea level	124, 125, 126, 126, 129, 130, 132	122, 123, 128

This shows a slight increase in size with increase in altitude.

Birds in breeding condition were taken in February (3), March (2), April (1) and July (1).

***Ptilinopus pulchellus decorus*
(Madarász)**

Cyclops Mountains: 1 sex?; April 24.

Hollandia: 1 ♂, 4 ♀; July 13–25.

Found near sea level.

WING.—♂ 107 mm.; ♀ 98, 100, 101, 105.

These compare well with Astrolabe Bay birds.

***Ptilinopus coronulatus quadrigeminus*
(Meyer)**

Bernhard Camp, 4 km. southwest: 1 ♂; April 5.

Bernhard Camp: 6 ♂, 6 ♀; March 24–April 24.

Cyclops Mountains: 2 sex?; April 24, December 8.

Found up to 850 meters altitude.

WING.—♂ 107 mm., 107, 107, 108, 110, 111, 112; ♀ 100, 105, 107, 107, 108, 109.

Hartert (1932, Nova Guinea, XV, p. 442) recorded *geminus* from the Idenburg River. The present series, however, agrees well with specimens from Astrolabe Bay and differs from the rather different Joli Island *geminus* in the gray, not yellowish, throat and the lack of a pronounced purple

line between the lilac and yellow of the crown.

One March bird was in breeding condition.

Ptilinopus iozonus jobiensis (Schlegel)

Bernhard Camp: 3 ♂, 2 ♀; April 26, May 1.

Cyclops Mountains: 8 sex?; March 27–May 1.

Hollandia: 1 ♀; July 15.

Found up to 50 meters altitude.

WING.—♂ 113 mm., 115, 117; ♀ 111, 112, 113.

The Idenburg River birds are slightly darker, less yellowish green, and have slightly more extensive gray areas in the back and wings than typical *jobiensis* from Jobi, but Hollandia and Cyclops Mountains birds are somewhat intermediate.

Ptilinopus bellus Selater

Lake Habbema: 1 ♀ imm.; August 19.

Lake Habbema, 9 km. northeast: 1 ♂, 1 ♀; October 24, November 3.

Bele River Camp: 2 ♂, 1 ♀; November 12–20.

Bernhard Camp, 15 to 18 km. northwest: ♂, ♀; January 10–February 7.

Bernhard Camp, 6 km. southwest: 6 ♂, 1 ♀; February 12–March 4.

Found from 1,200 to 3,225 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
2,800 meters	138 mm.	141
2,200 "	142, 144	131
1,800 "	138–145	130–140
1,200 "	135–143	139

This does not indicate increase in size with increase in altitude.

The Habbema specimen was found dead, floating in the lake. No others of this species were found there. Birds in breeding condition were taken in January (6), February (1), March (1) and November (3).

Ptilinopus naina naina (Temminck)

Bernhard Camp: 1 ♀; April 24.

Found at 50 meters altitude.

WING.—♀ 84 mm.

The differences between this bird and three females from southeast New Guinea (wing 86 mm., 88, 88) are slight. This appears to be a rare bird in collections. This is the first record of the species from north New Guinea.

The bird was shot in a large fig tree, the favorite resort of many fruit-eating birds.

Ptilinopus aurantiifrons Gray

Cyclops Mountains: 1 sex?; April 26.

Bernhard Camp: 1 ♀; March 22.

Found up to 50 meters altitude.

WING.—♀ 126 mm.

The March female was in breeding condition.

Ptilinopus ornatus gestroi

D'Albertis and Salvadori

Bernhard Camp, 15–18 km. southwest: 9 ♂, 10 ♀; January 11–28.

Cyclops Mountains: 1 sex?; April 23.

Hollandia: 1 ♂; June 21.

Found from sea level to 2,150 meters altitude.

WING.—♂ (9) 145–154 mm. (av. 149); ♀ (10) 142–150 (av. 146.9).

This series is fairly uniform and differs considerably from the type of *kaporensis* Rothschild and Hartert (wing 153 mm.) from Kapaur in the paler, more yellowish brown chest, and in the much greener, less brownish fore back and hind neck. A series of nineteen birds from the southern slopes of the Snow Mountains (wing ♂ 148–156 mm., ♀ 147–154) shows some variations. Most specimens compare well with the type of *kaporensis*, while a few birds have a less brownish tinge on the chest and hind neck, showing a tendency toward *gestroi*. One upper Fly River bird compares well with the Kapaur specimen.

A series of six birds from the Aroa and St. Joseph rivers, nearly topotypical of *gestroi* (wing 152–157 mm.), is intermediate between the type of *kaporensis* and the present north New Guinea series. However, on the character of the greener, less brownish hind neck it is closer to the north New Guinea birds. A Kumusi River bird compares well with the north New Guinea series.

From the above evidence it appears that

the birds usually referred to *gestroi* represent a series with characters varying geographically; the extremes occur in the Onin Peninsula and in north New Guinea. It is advisable to recognize this difference by name; *kaporensis* definitely refers to the dark kind, which ranges from the Onin Peninsula along the south of the Snow Mountains to the Fly River; the name *gestroi* is available for the pale north New Guinea and the somewhat intermediate southeast New Guinea birds.

Birds in breeding condition were taken in January (9) and February (1).

Megaloprepia magnifica septentrionalis
Meyer

Bernhard Camp: 3 ♂, 3 ♀; March 26–April 26.

Cyclops Mountains: 4 sex?; April 5–October 21.

Hollandia: 4 ♂, 4 ♀, 2 sex?; June 20–October 27.

Found up to 50 meters altitude.

WING.—♂ 156 mm., 160, 160, 161, 162, 163, 167; ♀ 156, 159, 159, 161, 161, 161, 164.

These birds agree with Astrolabe Bay birds and differ from southeast New Guinea *poliura* in the slightly blacker under side of the rectrices and the average brighter yellow abdomen and under tail coverts; *interposita* averages slightly brighter yellow on the abdomen and under tail coverts and slightly larger than the present series.

The July female was in breeding condition.

Ducula mülleri aurantia (Meyer)

Bernhard Camp: 1 ♂ ad.; April 20.

Found at 50 meters altitude.

WING.—224 mm.

This bird agrees with six birds from the Waropen Coast and Constantinhafen and differs from twenty birds from south New Guinea (Setekwa River to Brown River) and the Aru Islands in the paler, more pinkish vinaceous, not darker and more bluish vinaceous, breast; in the slightly brighter, more chestnut color of the mantle, which is most pronounced in the Constantinhafen birds; in the lesser extent of this mantle; in the paler, more

lilac, less gray crown; and in the average smaller size (210–227 mm. against 225–241).

This was a rare bird at Bernhard Camp.

Ducula pinon jobiensis (Schlegel)

Bernhard Camp: 6 ♂, 2 ♀; March 25–April 26.

Cyclops Mountains: 2 sex?; October 15, 17.

Hollandia: 4 ♂; June 30–October 21.

Found up to 50 meters altitude.

WING.—♂ (10) 265–289 mm. (av. 274.5); ♀ 259, 260, 260, 277.

These birds are inseparable from Jobi Island birds.

Ducula rufigaster uropygialis
Stresemann and Paludan

Bernhard Camp, 4 km. southwest: 1 ♂; March 28.

Bernhard Camp: 4 ♂, 3 ♀; March 21–May 1.

Cyclops Mountains: 1 sex?; April.

Hollandia: 2 ♂; July 1, 3.

Found from sea level to 1,200 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
850 meters	196 mm.	
50 "	189, 190, 191, 193	192, 193, 194
Hollandia, sea level	198, 205	

These compare well with birds from Astrolabe Bay, near the type locality.

Ducula chalconota smaragdina Mayr

Bernhard Camp, 6 km. southwest: 3 ♂; February 17–25.

Found at 1,200 meters altitude.

WING.—210 mm., 214, 215.

These agree in color with Huon Peninsula birds; they are somewhat smaller, as Stresemann and Paludan have also pointed out for Weyland Mountains specimens (1936, Mitt. Zool. Mus. Berlin, XXI, p. 235).

This was a rather uncommon pigeon. No pigeons were breeding, though they showed some enlargement of gonads.

Ducula zoeae (Lesson)

Bernhard Camp, 6 km. southwest: 1 ♂; February 28.

Bernhard Camp, 4 km. southwest: 3 ♂, 1 ♀; March 11–April 1.

Bernhard Camp: 1 ♂, 1 ♀ imm.; April 13, 30.

Hollandia: 3 ♂, 1 ♂ fledgling; June 28.

Found from sea level to 1,200 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
1,200 meters	223 mm.	
850 "	215, 225, 225	211
0-50 "	211, 218, 225, 228	218

This shows no increase in size with increase in altitude.

A fairly common pigeon. Breeding birds were taken in April (1) and July (1). A fledgling bird was brought in at Hollandia, June 28.

Gymnophaps albertisii albertisii

Salvadori

Bernhard Camp, 18 km. southwest: 3 ♂ ad., 1 ♂ imm., 2 ♀ ad.; January 31, February 6.

Bernhard Camp, 15 km. southwest: 8 ♂ ad., 6 ♀ ad.; January 10–25.

Bernhard Camp, 6 km. southwest: 2 ♂, 1 ♀; February 25, 27.

Bernhard Camp, 4 km. southwest: 1 ♂; March 29.

Bernhard Camp: 1 ♂ imm.; April 30.

Found from 50 to 2,150 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
2,150 meters	204 mm., 206, 208	200, 200, 202
1,800 "	197, 198, 200, 201, 203, 205, 206, 206	197, 199, 199, 201, 204, 207
1,200 "	202	202
850 "	201	

In the males this shows a slight increase in size with increase in altitude.

The distribution of this pigeon appears to be erratic. In 1938–1939 it was found only on the Idenburg slopes and common only about 1,800 to 2,150 meters altitude. Breeding birds were taken in January (5) and February (2).

Columba vitiensis halmaheira

(Bonaparte)

Bernhard Camp, 15 km. southwest: 2 ♀ ad.; January 17, 30.

Found between 1,500 and 1,800 meters altitude.

WING.—♀ 225 mm., 226.

This pigeon appears to be a scarce bird and to have a small altitudinal range. One of the January females was in breeding condition.

Macropygia amboinensis balim Rand

Macropygia amboinensis balim RAND, 1941, Amer. Mus. Novitates, No. 1102, p. 5—Balim River.

Balim River: 6 ♂ ad., 6 ♀ ad., 2 ♀ imm.; December 11–17.

Found at 1,600 meters altitude.

WING.—♂ ad. 175 mm., 176, 177, 180, 181, 182; ♀ ad. 167, 171, 173, 175, 176, 177.

This dove was common in the older secondary forest along the Balim River. None of the specimens was breeding.

Macropygia amboinensis kerstingi

Reichenow

Bernhard Camp, 6 km. southwest: ♂ ad., 2 ♀ ad.; February 13–March 5.

Bernhard Camp, 4 km. southwest: ♂ ad., 3 ♀ ad.; March 9–April 6.

Bernhard Camp: 1 ♂ ad., ♀ imm.; April 28.

Cyclops Mountains: ♂ ad.; April 5.

Hollandia: 6 ♂ ad., 3 ♀ ad.; June 30–July 20.

Found from sea level to 1,200 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
1,200 meters	(8) 161–168 mm. (av. 164)	155, 160, 163
850 "	(8) 159–167 (av. 163)	156, 159, 159
150 "	162	
50 "	157	
Sea level	159, 160, 161, 162, 163, 166	157, 162, 166

This shows little variation in size with altitude, nor is there noticeable variation in color with altitude. On the basis of the dark coloration of the upperparts this series

is included in *kerstingi*, though the underparts average paler than in two males from Astrolabe Bay and considerably paler than in a series from south New Guinea that I also include in *kerstingi*.

There is considerable individual variation in this series in the brown or gray of the head, the presence or absence of barring on the breast and the depth of the color of the underparts.

This dove was fairly common in the forest substage but more so in areas of tall second growth. It was usually solitary and fed on small fruits and seeds. It was never found in the big fruiting trees to which were attracted the many fruit-eating pigeons. Breeding birds were taken in February (1), March (1), April (1) and July (1).

Macropygia nigrirostris nigrirostris

Salvadori

Bele River Camp: 1 ♀; November 22.
Bernhard Camp, 18 km. southwest: 1 ♀; February 3.

Bernhard Camp, 15 km. southwest: 1 ♂ ad., 1 ♂ fledgling, 1 ♀ ad.; January 11, 16.

Bernhard Camp, 4 km. southwest: 1 ♀; April 5.

Bernhard Camp: 1 ♀; May 1.

Cyclops Mountains: 1 ♀ ?; April 21.

Hollandia: 1 ♀; July 22.

Found from near sea level to 2,200 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
2,200 meters		147 mm.
2,150 "		145
1,800 "	156	
850 "		143
150 "		145
50 "		139

These scanty data indicate there may be increase in size with increase in altitude.

A not uncommon bird of the forest substage and second growth forest. A February and an April female were in breeding condition.

Reinwardtoena reinwardtsi griseotincta
(Hartert)

Lake Habbema, 9 km. northeast: 2 ♂, 4 ♀; October 26-31.

Bele River Camp: 5 ♀, 1 ♀ fledgling; November 12-29.

Bernhard Camp, 6 km. southwest: 1 ♂, 2 ♀; February 19, 28.

Cyclops Mountains: 1 sex?; April 28.

Hollandia: 1 ♀; July 1.

Found from near sea level to 2,800 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
2,800 meters	232 mm., 241	226, 231, 235, 239
2,200 "		235, 238, 241, 241, 244
1,200 "	237	227, 234
Sea level	233	

This shows no size variation correlated with altitude.

There are no significant differences when compared with southeast New Guinea birds.

A not uncommon solitary species of the higher forest substage, feeding on small seeds and fruit. Birds in breeding condition were taken in February (1), July (1), October (4) and November (1).

Chalcophaps stephani stephani Pucheran

Bernhard Camp: 2 ♂ ad.; March 22-April 18.

Cyclops Mountains: 1 sex? ad.; April 21.

Hollandia: 1 sex? ad.; October 27.

Found up to 150 meters altitude.

WING.—♂ ad. 139 mm., 141.

Henicophaps albifrons albifrons Gray

Bernhard Camp, 18 km. southwest: 1 ♂; February 5.

Bernhard Camp, 15 km. southwest: 3 ♂, 1 ♀; January 17-February 1.

Bernhard Camp, 6 km. southwest: 1 ♂; February 12.

Bernhard Camp: 1 ♂, 1 ♀; March 27, April 27.

Found from 50 to 2,150 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
2,150 meters	200 mm.	
1,800 "	197	
1,500 "	200, 202	196
1,200 "	197	
50 "	189	200

Compared with two Waigeu birds this series differs only slightly in averaging paler on the hind neck.

Gallicolumba rufigula septentrionalis
Rand

Gallicolumba rufigula septentrionalis RAND, 1941, Amer. Mus. Novitates, No. 1102, p. 6—Bernhard Camp, Idenburg River.

Bernhard Camp, 4 km. southwest: 2 ♀ ad.; March 11, 19.

Bernhard Camp: 2 ♂ ad., 1 ♀ ad.; April 14, 29.

Found up to 850 meters altitude.

WING.—♂ 130 mm., 131; ♀ 129, 131, 135.

A March female was in breeding condition.

Gallicolumba beccarii beccarii
(Salvadori)

Bele River Camp: 2 ♂, 1 ♀; November 23–29.

Bernhard Camp, 6 km. southwest: 3 ♂, 1 ♀; February 18–March 5.

Found at 1,200 and 2,200 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
2,200 meters	108 mm., 111	106
1,200 "	107, 107, 111	108

A November male was in breeding condition.

Gallicolumba jobiensis jobiensis
(Meyer)

Bele River Camp: 1 ♂ ad.; November 26.

Hollandia: 1 ♂ ad., 1 ♀ ad.; July 1, 25.

Found near sea level and at 2,200 meters altitude.

WING.—♂ 152 mm., 152; ♀ 145.

The November male had enlarged gonads.

Otidiphaps nobilis nobilis Gould

Bernhard Camp, 6 km. southwest: 2 ♂, 1 ♀; February 25, March 2.

Bernhard Camp, 4 km. southwest: 2 ♂, 3 ♀; March 8–29.

Bernhard Camp: 1 ♂; April 27.

Found from 50 to 1,200 meters altitude.

WING.—♂ 185 mm., 188, 191, 193, 197; ♀ 183, 184, 185, 187.

Hartert (1932, Nova Guinea, XV, p. 439) recorded two birds from the Idenburg River and two from the Mamberamo River without comment.

The present series, however, deserves comment. In Arfak birds the paler brown anterior part of the back, contrasting with the deep red-brown of the rest of the back, is conspicuous; in the present series only two specimens show this character. In Arfak specimens the hind neck has a highly iridescent green area; in the present series this varies; two have the iridescence of this area coppery; two have it mixed coppery and bluish green; and two have it dull green; the other two have the skin of the hind neck missing. In this series the iridescence of the hind neck is not so great as in Arfak birds, and in many lights the area appears gray, while in the Arfak birds in the same light it still appears green. Some Weyland Mountains birds and a Setekwa River bird show a slight tendency toward the Idenburg River birds but are closer to the Arfak and Wandaman specimens.

As *cervicalis* has been recorded from the Sepik area (Stresemann, 1923, Arch. für Naturgesch., LXXXIX, p. 82), probably this loss of the light area on the foreback and the dulling of the brilliance of the iridescence in the hind neck are slight tendencies toward *cervicalis*. Possibly an intermediate population occurs between the Idenburg and the Sepik rivers.

This was a fairly common pigeon of the forest floor, where most of the specimens were taken in Dyak-made snares. Two females in breeding condition were taken in March.

Goura victoria beccarii Salvadori

Bernhard Camp: 6 ♂ ad., 1 ♂ imm., 9 ♀ ad.; March 19–April 21.

Cyclops Mountains: 1 sex?; April 24.

Humboldt Bay: 1 sex?; July 26.

Found up to 50 meters altitude.

WING.—♂ ad. 357 mm., 361, 364, 367, 372, 385; ♀ ad. 345, 349, 350, 359, 365, 366, 370, 373; sex? (Humboldt Bay) 395.

There are no differences between the Humboldt Bay and Idenburg River birds.

No gouras were found in the hilly country in the immediate vicinity of Hollandia, and the local people said none occurred. However, we were told that they were common in the flat forested country east of Humboldt Bay, and one specimen was brought us from there. Near Bernhard Camp the goura was common in the flat, partly inundated forest. They fed on the bare, muddy ground, and when alarmed flew with a great thrashing of wings to the top of tall trees. None of the specimens was in breeding condition.

Chalcopsitta duivenbodei duivenbodei
(Dubois)

Bernhard Camp: 8 ♂, 9 ♀; April 16–May 2.

Cyclops Mountains: 3 sex?; October 24, 28.

Found at 50 and 150 meters altitude.

WING.—♂ 174 mm., 175, 177, 178, 180, 181, 184, 187; ♀ 171, 173, 175, 176, 176, 178; sex? 167, 170, 173.

The Cyclops Mountains are not far from the type locality (Tana Mera). The Bernhard Camp birds, compared with seven specimens from the vicinity of Humboldt Bay, average considerably darker brownish black above and below and have the pale streaking of the hind neck much reduced. However, a specimen from the Prauwenvivak collected in 1920 is not much darker in general coloration, suggesting that considerable foxing may take place in specimens of this species.

The difference in the streaking of the hind neck appears fairly constant. The Idenburg River birds may represent an undescribed race, but I have seen no examples of *intermedia*. The presence of the yellow markings on the tail feathers is variable and is correlated with sex. The males all have at least a faint indication of a yellow mark or edging on the upper surface of the inner web of the outer tail feathers; in the females it may be present, indicated or, more commonly, lacking.

On April 27 I saw six or eight lorries fluttering about a cavity in a large forest tree trunk from which two big fruit bats (*Dobsonia*) shortly flew. Two April females were in breeding condition.

Pseudeos fuscata incondita (Meyer)

Balim River: 2 ♀; December 7.

Bernhard Camp, 18 km. southwest: 6 ♂, 1 ♀; February 8, 9.

Bernhard Camp, 15 km. southwest: ♂, 3 ♀; January 10–February 2.

Bernhard Camp, 6 km. southwest: 1 ♂, 3 ♀; February 13.

Bernhard Camp: 2 ♂, 1 ♀; April 12, 17.

Cyclops Mountains: 4 sex?; March 29–April 8.

Found from 50 to 2,150 meters altitude.

Altitude	WING MEASUREMENTS	
	Male	Female
2,150 meters	164 mm., 165, 165, 165, 171, 172	161
1,800 "	160–170	162, 163, 164
1,650 "		155, 163
1,200 "	163	158, 160, 163
50 "	166, 170	163

There is no regular increase in size with increase of altitude.

These birds average somewhat larger than south New Guinea birds.

This series is predominantly red; only three birds are in the yellow phase; three are in an intermediate orange red phase; the rest are in the red phase.

At the 1,800-meter Camp each evening long lines of squealing lorries flew over the camp, some of them apparently coming from some distance out over the Idenburg plain, and at Bernhard Camp each evening lines of lorries were seen flying high toward the hills, perhaps indicating a daily movement to and from the hills where they sleep. Many of these lorries were probably this species. As with many lorries, when one is shot from a flock the rest of the flock may follow the dead bird nearly to the ground. None of the specimens was in breeding condition.

Trichoglossus haematodus intermedius
Rothschild and Hartert

Bernard Camp, 6 km. southwest: 1 ♀; March 2.

Bernhard Camp, 4 km. southwest: 2 ♀; March 29, April 6.

Bernhard Camp: 5 ♂, 3 ♀; April 16–May 3.

Cyclops Mountains: 2 sex?; April 2, 31.

Hollandia: 2 ♂; June 29, July 11.

Found from sea level to 1,200 meters altitude.

WING.—♂ 134 mm., 142, 142, 142, 143, 144; ♀ 133, 140, 140, 141, 142.

These differ only slightly from Arfak birds (*haematodus*) in the average less blue forehead and sides of the head. The larger size of this form mentioned by Hartert (1930, Nov. Zool., XXXVI, p. 104) is not apparent. Zunge (1937, Nova Guinea, [N.S.] I, p. 156) has also suggested that this form is barely separable. However, the whole group requires revision.

Domicella lory viridicrissalis

(de Beaufort)

Bernhard Camp, 6 km. southwest: ♂, 4 ♀; February 13–27.

Bernhard Camp, 4 km. southwest: 1 ♀; March 3.

Bernhard Camp: 7 ♂, 3 ♀; April 11–25.

Cyclops Mountains: 3 sex?; April 8–November 1.

Hollandia: 5 ♂; June 6–October 22.

Found from sea level to 1,200 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
1,200 meters	(10) 154–173 mm. (av. 161.8)	144, 150, 156, 157
850 "		156
50 "	160, 161, 161, 163, 165, 165	149, 150, 151
150 "	(sex? 158, 159, 160)	

This shows no increase in size with increase in altitude. There are no significant geographical variations in color in this series.

A fairly common lory, usually seen in pairs in the upper part of the forest. None of the specimens was in breeding condition.

Charmosyna papou goliathina

Rothschild and Hartert

Lake Habbema, 9 km. northeast: 3 ♂, 3 ♀; October 20–27.

Bele River Camp: 8 ♂, 7 ♀; November 9–December 1.

Bernhard Camp, 15 km. southwest: 4 ♂, 3 ♀; January 23, 24.

Found from 1,800 to 2,800 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
2,800 meters	144 mm., 145, 151	141, 142, 142
2,200 "	141, 142, 142, 143, 147, 147, 148, 149	139, 139, 140, 141, 141, 142, 142
1,800 "	138	137, 140

There appears to be a slight increase in size with increase in altitude. Both color phases are represented, the dark phase predominating. There is a correlation in this collection between altitude and predominance of color phase. At 2,800 meters three males, two females dark phase, one female bright phase; at 2,200 meters fifteen dark phase; at 1,800 meters one dark phase, six bright phase were taken.

This fairy lory was much scarcer and less conspicuous than I found the same species in southeast New Guinea in 1933. An October and a November female were in breeding condition.

Charmosyna josefinae josefinae (Finsch)

Bernhard Camp, 6 km. southwest: ♂, ♀; February 15–March 3.

Bernhard Camp, 4 km. southwest: 8 ♂, 7 ♀; March 9–April 6.

Bernhard Camp: 1 ♀; May 3.

Found at 50 meters (one specimen) and commonly from 850 meters to 1,200 meters altitude.

WING.—♂ (10) 118–130 mm. (av. 123.3) ♀ (10) 116–127 (av. 120.3).

This series differs only slightly from Arfak birds in the duller blue patch on the nape.

At the 1,200-meter Camp this fairy lory was fairly common but inconspicuous. In pairs or threes or fours it flew silently through the forest, only occasionally giving a faint, high squeak. A climbing vine with a large white flower was especially attractive to them. They climbed slowly about the blooms, nibbling at them, and were so unobtrusive that a casual glance would have missed them. At the 850-meter Camp a few came to the flowering

trees frequented by various other species. Three February females were in breeding condition.

Charmosyna josefinae cyclopum Hartert

Hollandia: 1 ♂ imm.; July 4.

Found near sea level.

WING.—♂ imm. 112 mm.

This specimen compares well with Cyclops Mountains examples.

Charmosyna pulchella rothschildi
(Hartert)

Hollandia: 4 ♂ ad., 2 ♀ ad., 1 ♀ imm.; July 4-8.

Cyclops Mountains: 1 ♂ ad., 4 ♀ ad.; March 20-April 7.

Bernhard Camp, 15 to 18 km. southwest: 3 ♂ ad., 3 ♀ ad., 1 ♀ imm.; January 10-February 4.

Bernhard Camp, 4 km. southwest: ♂ ad., 2 ♂ imm., ♀ ad., 2 ♀ imm.; March 9-April 3.

Found from near sea level to 150 meters altitude near Hollandia, and from 850 to 2,150 meters altitude on the Idenburg slopes.

WING MEASUREMENTS

Altitude	Male	Female
2,150 meters		94 mm.
1,800 "	95, 95, 98	94, 96
850 "	94-99	91-96
150 "	99	92-94
Near sea level	94, 98, 99, 101	91, 97

This shows no increase in size with increase in altitude. The race *bella* is barely distinguishable from *pulchella*. This race, *rothschildi*, surprisingly is very distinct and has a surprising distribution. In addition to the character of the green in the breast, given by Hartert (1930, Nov. Zool., XXXVI, p. 105), this race is clearly marked by the irregularly purplish black abdomen and the yellowish wash of the upper tail coverts.

I can detect no differences between the Hollandia-Cyclops Mountains birds and the Idenburg slope birds, though the females of the former area have the green breast band slightly more pronounced.

The distribution of this race, the north slopes of the Snow Mountains and the Cyclops Mountains, as Hartert has already

pointed out (1932, Nova Guinea, XV, p. 450), is especially interesting as indicating that some of the avifauna of the isolated mountains on the northern edge of New Guinea received their elements as colonists from the central range.

At the 1,200-meter Camp, and above, this little fairy lory was uncommon. But at the 850-meter Camp scores of them came in little squeaking flocks to feed on the flowers of some of the tall forest trees, frequented also by other *Charmosyna* and many *Myzomela*. Two April females were laying.

Charmosyna wilhelminae (Meyer)

Bernhard Camp, 15 km. southwest: 1 ♀; January 14.

Bernhard Camp, 4 km. southwest: 1 ♂ imm.; March 30.

Found at 850 and 1,800 meters altitude.

WING.—♂ 69 mm.; ♀ 66.

Charmosyna rubronotata subspecies?

Bernhard Camp, 4 km. southwest: 3 ♂ ad., 1 ♀; March 10-April 2.

Found at 850 meters altitude.

WING.—♂ 84 mm., 85, 86; ♀ 85.

I have no comparative material.

These were taken in the top of a tall flowering tree in the forest where other species of *Charmosyna* and *Myzomela* feed in abundance.

Oreopsittacus arfaki major Ogilvie-Grant

Mt. Wilhelmina, 7 km. northeast: ♂, ♀; August 30-September 10.

Lake Habbema: ♀; August 23.

Lake Habbema, 9 km. northeast: ♂, ♀; October 10-November 2.

Bele River Camp: ♂; November 30.

Found from 2,800 to 3,600 meters altitude; specimens from 2,200 meters were brought in by natives, probably from higher altitudes.

WING MEASUREMENTS

Altitude	Male	Female
3,600 meters	84-91 mm.	83-89
3,225 "	89	
2,800 "	84-91	82-88

This shows no increase in size with increase in altitude; birds from higher alti-

tudes are slightly darker green. Five females have red feathers in the forehead; in one the forehead is all red.

Compared with Weyland Mountains birds the latter are slightly lighter green in general coloration.

Three October females had enlarged gonads.

Neopsittacus musschenbroekii medius
Stresemann

Lake Habbema, 9 km. northwest: 5 ♂ ad., 3 ♂ imm., 6 ♀ ad.; October 11–November 7.

Bele River Camp: 2 ♂ ad., 2 ♀ ad., 1 ♀ imm.; November 1–December 1.

Bernhard Camp, 15 km. southwest: 3 ♂ ad., 2 ♀ ad.; January 10–28.

Found from 1,800 to 2,800 meters altitude.

WING MEASUREMENTS

Altitude	Male ad.	Female ad.
2,800 meters	115 mm., 117, 118, 119, 124	113, 114, 114, 114, 116, 116
2,200 "	115, 120	
1,800 "	115, 118, 120	113

There is no evident increase in size with altitude. This series compares well with a Weyland Mountains series which includes the type.

Neopsittacus pullicauda alpinus
Ogilvie-Grant

Mt. Wilhelmina, 7 km. northeast: ♂ ad., ♂ imm., ♀ ad., ♀ imm.; August 30–September 24.

Lake Habbema: ♂ ad., ♀ ad.; August 6–September 1.

Lake Habbema, 9 km. northeast: ♂ ad., ♀ ad.; October 14–November 2.

Bele River Camp: ♂ ad., ♂ imm., ♀ ad., ♀ imm.; November 11–28.

Found from 2,200 to 3,600 meters altitude.

WING MEASUREMENTS

Altitude	Male ad.	Female ad.
3,600 meters	108–111 mm.	104–106
3,225 "	108–112	103–105
2,800 "	103–110	100–106
2,200 "	101–108	102–107

This shows a slight increase in size with increase in altitude; in addition, the birds from the higher altitudes are slightly darker green than birds from lower altitudes.

Comparing this series with *pullicauda* from southeast New Guinea there is another very good color character in addition to the paler breast; the sides of the head are much darker green, less yellowish than in *pullicauda*.

I have no topotypical *alpinus*, but the present series, compared with four Weyland Mountains specimens, is similar, differing only in averaging slightly darker green above and on the sides of the head.

One October male had enlarged gonads.

Psittaculirostris salvadorii (Oustalet)

Bernhard Camp: 1 ♀; May 4.

Found at 50 meters altitude.

WING.—109 mm.

I have already recorded this specimen of a rare species (1941, Amer. Mus. Novitates, No. 1102, p. 7).

Micropsitta pusio beccarii (Salvadori)

Bernhard Camp: 4 ♂, 1 ♀; April 24–May 5.

Cyclops Mountains: 8 sex?; March 29–April 5.

Hollandia: 3 ♂, 2 ♀, 2 sex?; June 30–November 4.

Found up to 50 meters altitude.

WING.—♂ 58 mm., 60, 61, 61, 63, 63, 65; ♀ 61, 62.

Micropsitta bruijnii bruijnii (Salvadori)

Bernhard Camp, 15 km. southwest: 12 ♂, 10 ♀, 2 nestlings; January 10–29.

Found at 1,800 meters altitude.

WING.—♂ (10) 66–69 mm. (av. 67.3); ♀ (10) 62–67 (av. 64.3).

Bruijn's parrot was fairly common at the 1,800-meter Camp but was not found elsewhere. It was usually in pairs, climbing about the trunks of trees, especially dead, rotting tree trunks. It rarely climbs head downward like a nuthatch but creeps across and upward on big tree trunks with facility. Its call is a fine, high squeak. What it ate puzzled me for a time, as the gullet and stomach contents were always a

white paste in which neither Mr. Brass, the botanist, nor Dr. Toxopeus, the entomologist, could recognize any structure even with a twenty-power magnifying glass. However, I finally noticed the resemblance between these stomach contents and a fungus that formed jelly-like layers on rotten wood and saw these birds apparently feeding at such places. An examination indicated that the parrots had actually been nibbling the fungus. It seemed fairly sure that these parrots feed largely on this fungus.

This bird digs both nesting and sleeping holes in dead trees. Near camp on January 11 I found a male excavating a cavity about eight feet up in a dead stub, and it apparently spent the night there. I collected it the following evening and took down the stub for examination. The tunnel led upward from a small entrance to curve and enter at the top a resting chamber that was directly above the entrance. The nest was all freshly excavated; there was no lining.

One of the January females was in breeding condition, and a nest containing two young was found January 12. The nest was about ten feet up in a dead, sixteen-inch stub in the forest. The nest was similar to that of the nesting chamber of the male mentioned above, but the nest chamber was considerably larger. The entrance was slightly enlarged, then a tunnel 30 mm. in diameter led inward and sharply upward, to enter, at the top and back, the nest chamber which was directly above the entrance. The nest chamber measured about 100 by 55 mm. wide, and it had a layer of chips about 40 mm. deep on the floor, on which the young were resting.

The two small young, probably only a few days old, had the feather tracts barely indicated; a small white egg tooth was present, and there was some short yellowish white down on the back and rump and the femoral, humeral and ventral feather tracts.

Probosciger aterrimus stenolophus
(van Oort)

Bernhard Camp, 6 km. southwest: 1 ♀; March 4.

Bernhard Camp: 2 ♂, 3 ♀; March 26-May 2.

Cyclops Mountains: 1 sex?; October 19.

Sentani Lake: 1 sex?; December 6.

Found up to 1,200 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
1,200 meters		372 mm.
Near sea level	355, 380	349, 352, 363

Cacatua galerita triton Temminck

Bernhard Camp, 6 km. southwest: 4 ♂, 2 ♀; February 15-March 1.

Bernhard Camp: 3 ♂, 2 ♀; March 22-May 2.

Cyclops Mountains: 7 sex?; October 19-November 26.

Hollandia: 1 ♂, 1 ♀; July 11, September 11.

Found up to 1,200 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female	Sex?
1,200 meters	335 mm., 338, 351, 358	324, 328	
50 "	302, 304, 306	297, 312	
150 "			298, 310,
(Cyclops			311, 313,
Mts.)			316, 321, 327
Sea level	311	316	
(Hollandia)			

This shows a correlation between increase in altitude and increase in size. However, the birds from the base of the large mountain mass are not larger than those more distant from the large mountains, as Mayr (1937, Amer. Mus. Novitates, No. 947, p. 8) has postulated.

The white cockatoo was common on the Idenburg plains and scarce on the higher slopes. A female in breeding condition was taken in February and another in March.

Psitttrichas fulgidus (Lesson)

Bernhard Camp, 6 km. southwest: 5 ♂, 7 ♀; February 15-March 3.

Bernhard Camp, 4 km. southwest: 5 ♂, 3 ♀; March 11-April 6.

Bernhard Camp: 1 sex?; April 13.

Found from 50 to 1,200 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
1,200 meters	297 mm., 301, 306, 313, 325	295, 295, 299, 302, 304, 310, 312
850 "	304, 305, 305, 312, 312	305, 305, 308
50 "	(sex? 306)	

Variation in size with altitude is not apparent.

A fairly common bird at the 850- and the 1,200-meter Camps, where it frequented the tops of the forest trees, feeding on soft fruits. The base of the bill of the specimens was usually caked with fruit pulp. Two birds were seen feeding on the flower of a *Freycinetia*. One February female was laying, and an April female had an enlarged ovary.

Lorius roratus pectoralis (Müller)

Bernhard Camp, 15 km. southwest: 1 ♂; January 18.

Bernhard Camp: 7 ♂, 9 ♀; March 19–April 24.

Cyclops Mountains: 2 ♂, 2 ♀; October 17–November 5.

Found from 50 to 1,200 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
1,200 meters	260 mm.	
150 "	256, 266	248
50 "	257, 265, 268, 269, 273, 273	237, 238, 241, 242, 244, 247, 249

Though the data are scanty, these indicate that there is no increase in size with increased altitude.

Geoffroyus geoffroyi minor Neumann

Bernhard Camp: 6 ♂, 1 ♀; January 5–April 26.

Cyclops Mountains: 1 ♂; October 25.

Hollandia: 5 ♂, 3 ♀; June 20–July.

Found from sea level to 150 meters altitude.

WING.—♂ (10) 157–168 mm. (av. 162.8); ♀ 151, 155, 157, 157.

These are somewhat smaller than Jobi birds.

The parrot was found commonly in the inundated shrubbery along the lagoon margin. One female had a right ovary present, about one-half the size of the left.

Geoffroyus simplex bürgersi Neumann

Bernhard Camp, 6 km. southwest: 1 ♂ ad., 1 ♀ ad., 2 nestlings; January 10, 17.

Bernhard Camp, 4 km. southwest: 1 ♂ ad., 2 ♀ ad.; March 11.

Hollandia: 1 ♀ ad.; June 29.

Found from near sea level to 1,800 meters altitude.

WING.—♂ ad. 150 mm., 156; ♀ 141, 152, 154, 156.

I have a single Arfak female, wing 160 mm.; the present series is smaller and has less blue under the wing, but without sufficient Arfak material it is impossible to discuss the status of races in this species.

This parrot was not uncommon at the 1,200- and 1,800-meter Camps; the Hollandia record from sea level was a surprise. It frequented the tree tops singly or in pairs, and its sharp short cry often repeated was frequently heard. A nest was found January 12 at the 1,800-meter Camp. It was an excavation, apparently made by the bird, thirty feet up near the top of a large, rotten stub in the forest. The nest cavity had an entrance about 80 mm. in diameter, and the nest chamber, entered by a tunnel only 70 mm. long, measured about 200 mm. across by 400 mm. deep. It contained three young of quite different sizes; they had sparse, short gray down scattered over the body above and below, on the legs and on the wings. Some of it at least was not on the tips of the body feathers which were just appearing.

Alisterus chloropterus moszkowskii

(Reichenow)

Bernhard Camp, 6 km. southwest: 2 ♀ imm.; February 13, 16.

Bernhard Camp, 4 km. southwest: 1 ♂ ad.; April 5.

Hollandia: 5 ♂ ad., 2 ♂ imm., 4 ♀ ad.; June 20–October 30.

Found up to 1,400 meters altitude.

WING.—♂ ad. (850 meters) 186 mm. (sea level) 176, 183, 183, 186, 188; ♀ ad. 169, 185, 185, 195.

Psittacella brehmii intermixta Hartert

Lake Habbema: 1 ♂ ad., 1 ♂ imm., 2 ♀; August 9–19.

Lake Habbema, 9 km. northeast: 1 ♂ imm.; October 10.

Bele River Camp: 1 ♂ ad., 1 ♀ ad.; November 11, 27.

Bernhard Camp, 15 to 18 km. southwest: 1 ♂ ad., 1 ♂ imm.; January 15, February 9.

Found from 1,800 to 3,225 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
3,225 meters	134 mm., 141	136, 143
2,800 "	136	
2,200 "	129	137
1,800-2,150 meters	133, 133	

This shows no very evident increase in size with increased altitude.

The great variation in color in any series of this species and the fact that fading greatly affects the brown of the head make the recognition of races based on slight color differences unsatisfactory. In addition there are populations which differ slightly from each other but do not merit a name.

The present series compared with a Weyland Mountains series collected 1920-1931 (wing ♂ 129 mm.; ♀ 127, 128, 129, 131, 132, 134, 134, 136) has a slightly smaller bill; an average longer wing; a somewhat darker crown, side of head and chin; and in the female is slightly more greenish, less yellowish; and with slightly more extended barring on the breast. Compared with Mt. Goliath birds, including the type, collected in 1911 (wing ♂ 122 mm., 124, 126, 127, 129; ♀ 125, 127, 128, 131) the present series is considerably larger; has a slightly larger bill; a much darker head; is somewhat more greenish, less yellowish in general coloration; and has slightly more barring on the breast. Taken in connection with the fact that some of these specimens come from the top of the central range, where their range is continuous with that of the south New Guinea birds, it seems inadvisable to separate any of these three slightly differing populations as races, especially as in some characters the geographical extremes are more alike than intermediate populations. I have not seen the unique type of *bürgersi*, a female,

wing 126 mm. (Stresemann, 1923, Arch. f. Naturg., LXXXIX, p. 60). From the literature it is not apparent how it differs from *intermixta*, if it is different.

Hartert (1930, Nov. Zool., XXXVI, p. 107) says the young have the breast green, with narrow dull yellow cross-bars, without black bars. This is not true of the present series, in which the immature males and females resemble the adult female very closely in plumage.

This psittacella was rather uncommon in the coniferous forests about Lake Habbema, where I found it feeding on the fruits of *Podocarpus*, but was rare at the lower altitudes. It was always found singly.

One January male had enlarged gonads.

Psittacella lorentzi van Oort

Mt. Wilhelmina, 2 to 7 km. east: 3 ♂ ad. 3 ♂ imm., 5 ♀; August 30-September 27.

Lake Habbema: 5 ♂ ad., 4 ♂ imm., 2 ♀, 1 sex? imm.; August 6-30.

Bele River Camp: 1 ♀; November 19.

Found from 3,225 to 3,950 meters altitude; the Bele River specimen was brought in by natives, undoubtedly from a higher altitude.

WING.—♂ ad., 111 mm., 112, 117, 117, 118, 119, 121; ♂ imm. 110, 112, 115, 117; ♀ 112, 113, 114, 118.

This species has hitherto been known only from the specimens collected on Mt. Wilhelmina in 1909-1913. Junge (1937, Nova Guinea, [N.S.] I, p. 170) considers it a race of *picta*. While it is certainly more closely related to *picta* than to any other member of the genus, it still is different enough to be considered a species; *lorentzi* has the sides of the head and chin green or bluish, in *picta* they are dull brown; in *lorentzi* the brown of the top of the head and nape does not extend into the sides of the neck, in *picta* the chestnut brown of the nape extends down the sides of the neck as a bar in front of the yellow mark; in *lorentzi* the underparts are uniform greenish or yellowish, in *picta* there is a blue area on the upper breast, with a line of blue extending down to the abdomen. In addition, *lorentzi* has a less brightly colored crown and nape, yellow instead of red in

the rump and upper tail coverts, and more distinct barring on the back.

The adult and immature male have been described by van Oort (1910, Notes Leyden Mus., XXXIII, p. 212) and figured (1937, Nova Guinea, [N.S.] I, Pl. II). The figures of both specimens are much more olive green, less clear green, than the present series; in the adult male the brown of the head is much paler, the yellow bar on the side of the neck is less orange, the yellow of the abdomen more restricted and the bill more blue gray than the plate shows. In the immature male the back barring is wider and the yellow narrower than the plate indicates. The adult female, which has not been described, is very similar to the immature male.

In three of the adult males there are a few partly yellowish feathers in the crown, and one bedraggled specimen, apparently adult, has a curious appearance, with loose-textured yellowish feathers in the crown and back, and many feathers of the underparts are loose-textured and pale.

One female has a few chestnut feathers in the crown; two others have a few yellowish feathers.

This parrot was fairly common in the denser forest where it was usually found singly, or at most in pairs. Sometimes it was found feeding on the fruit of the conifer *Dacrydium*. When in the trees it was a quiet bird, moving about but little and allowing a close approach, but when flushed had a swift, direct flight. Occasionally one was flushed from the ground where short grass covered damp places in forest glades.

One male in breeding condition was taken in August.

Psittacella modesta subcollaris Rand

Psittacella modesta subcollaris RAND, 1941, Amer. Mus. Novitates, No. 1102, p. 8—15 km. southwest of Bernhard Camp, Idenburg River.

Lake Habbema, 9 km. northeast: 2 ♂ imm., 1 ♀; October 29, November 1.

Bele River Camp: 3 ♂ ad., 2 ♂ imm., 2 ♀; November 9–30.

Bernhard Camp, 15 to 18 km. southwest: 3 ♂ ad., 1 ♂ imm., 4 ♀; January 19–February 5.

Found from 1,800 to 2,800 meters altitude.

Altitude	WING MEASUREMENTS		
	Male ad.	Male imm.	Female
2,800 meters		94 mm., 95 105	
2,200 "	96, 99, 100	95, 99	98, 102
2,150 "	94		
1,800 "	94, 98	95	92, 95, 95, 96

This shows a slight increase in size with increase of altitude.

The immature males are in a plumage very similar to that of the females.

There is considerable variation in plumage in this series. In the adult males the amount of yellow in the hind neck varies, and in two males there is some yellow in the center of some of the crown and nape feathers; the amount of brownish wash on the throat varies considerably, as does the shade of green of the abdomen and the amount of barring on the rump. One of the immature males has a greenish wash on the brown crown and nape. In the females there is considerable variation in the amount of yellow in the hind neck, in the color of the crown and nape, which may be almost uniform brown, or with conspicuously paler centers on the feathers, giving a scaled appearance. The amount of barring on the rump varies somewhat; below, the intensity of the reddish barring on the breast varies considerably.

The little psittacella was an uncommon bird, usually found singly or in pairs in the lower part of the forest where it fed on seeds and small fruit.

Psittacella madaraszi major Rothschild

Bernhard Camp, 8 km. southwest: 1 ♀; February 12.

Found at 1,600 meters altitude.

WING.—95 mm.

I have already recorded this specimen (1941, Amer. Mus. Novitates, No. 1102, p. 8).

Loriculus aurantiifrons batavorum Stresemann

Hollandia: 1 ♀, 1 sex?, fledglings; July 25.

Found near sea level.

These two fledglings, brought in by natives, are presumably of this race.

Cacomantis variolosus infaustus

Cabanis and Heine

Balim River Camp: 2 ♂ ad., 2 ♀ imm., 1 sex? ad.; December 9-15.

Bernhard Camp: 1 ♂ ad., 1 ♂ imm.; March 24, April 16.

Cyclops Mountains: 1 ♀ ad., 1 ♀ imm.; April 2, 4.

Found from 50 to 1,600 meters altitude.

WING.—♂ ad. 119 mm., 125, 136; ♀ ad. 118.

These adult males are fairly uniform in coloration, with a gray breast more or less washed with rufous, the rufous increasing in intensity posteriorly. On bill character they cannot be separated from two Misol birds which differ, however, in their much grayer coloration below. Individual variation appears strongly in some other series of this species, and at present it is not advisable to use color for separating races in this area.

This was a common cuckoo in the *Casuarina* forests of the Balim Valley. It was called "Piet Van Fleet" by some of the Netherlands party, from the resemblance of its whistled calls to those syllables.

Cacomantis pyrrhophanus excitus

Rothschild and Hartert

Mt. Wilhelmina, 2 to 7 km. northeast: 5 ♂ ad., 1 ♀ ad.; September 12-27.

Lake Habbema, 9 km. northeast: 1 ♂ ad., 1 ♀ ad.; October 11, 25.

Bele River Camp: 1 ♂ ad., 1 ♀ ad.; November 30.

Balim River Camp: 2 ♂ ad., 2 ♀ imm.; December 6-16.

Bernhard Camp, 18 km. southwest: 1 ♂ ad.; February 8.

Found from 2,150 to 3,800 meters altitude.

WING.—♂ ad. (10) 139-151 mm. (av. 143); ♀ ad. 142, 142, 143.

This series averages slightly larger, slightly darker and more intensely colored on the breast and slightly darker gray on the throat than a series from southeast New Guinea, but there is considerable variation

in each series, and the amount of overlap of these characters is too great to be of taxonomic importance.

This species has been rare in collections and recorded from but few locations in New Guinea, probably due to its being a high altitude species and somewhat difficult to secure.

A November female had an enlarged ovary.

Cacomantis castaneiventris arfakianus
Salvadori

Bernhard Camp, 6 km. southwest: 1 ♂ ad.; March 2.

Found at 1,200 meters altitude.

WING.—♂ 113 mm.

This appears identical with Arfak material.

Chalcites ruficollis (Salvadori)

Bele River Camp: 1 ♂, 1 ♀; November 10, 18.

Collected at 2,200 meters altitude.

WING.—♂ 95 mm.; ♀ 98.

Compared with southeast New Guinea birds I can see no differences.

Chalcites malayanus poecilurus (Gray)

Bernhard Camp: 1 ♂ ad.; April 24.

Cyclops Mountains: 1 ♀?; April 4.

Found up to 150 meters altitude.

WING.—♂ 89 mm.; ♀? 92.

Chalcites meyerii (Salvadori)

Bernhard Camp, 15 km. southwest: 1 ♂ ad.; January 15.

Found at 1,800 meters altitude.

WING.—89 mm.

This specimen came to an illuminated cloth set for attracting night moths and was captured fluttering about on the ground.

Microdynamis parva griseus

Mayr and Rand

Hollandia: 1 ♂; October 29.

Found near sea level.

WING.—115 mm.

A dark, grayish bird.

Caliechthrus leucolophus (Müller)

Bernhard Camp: 1 ♂; April 30.

Hollandia: 1 ♂; June 12.

Found up to 50 meters altitude.

WING.—♂ 168 mm., 178.

These show no significant differences when compared with south New Guinea birds.

Eudynamys scolopacea rufiventer
(Lesson)

Bernhard Camp, 6 km. southwest: 1 ♂ ad.; February 3.

Bernhard Camp, 4 km. southwest: 1 ♂ ad., 1 ♂ imm.; March 28–April 4.

Found at 850 and 1,200 meters altitude.

WING.—♂ ad. 188 mm., 190; ♂ imm. 187.

Centropus menbeki menbeki Lesson

Bernhard Camp, 4 km. southwest: 1 ♀; March 17.

Bernhard Camp: 6 ♂, 6 ♀; April 13–May 1.

Hollandia: 3 ♂, 1 ♀; March 29.

Found from sea level to 850 meters altitude.

WING.—♂ 210 mm., 215, 219, 221, 221, 225, 226, 228, 233; ♀ 215, 217, 217, 220, 224, 224, 238.

Two males and three females have brown barring on the tail. Wear changes the gloss from blue to green in this species.

This coucal was not uncommon in the forest about Bernhard Camp, climbing about the undergrowth and low, shrubby trees with awkward hops. Of five stomachs examined, three contained insects; one, a frog, and one, the remains of some small bird. Four females in breeding condition were taken in April. An egg removed from the oviduct of one was: shape broadly ovate, almost oval; shell rough from a slight, lightly attached lime film on the surface; gloss none; color white; size 37 by 30.3 mm.

Centropus bernsteinii bernsteinii
Schlegel

Bernhard Camp: 2 ♂, 3 ♀; March 24–April 3.

Cyclops Mountains: 1 ♀; April 5.

Sentani Lake: 2 ♀; November 6, 20.

Found up to 150 meters altitude.

WING.—♂ 164 mm., 171; ♀ 168, 172, 173, 181, 188.

This small *Centropus* was not uncommon in and about the second growth and its adjacent cane grass fringing the Idenburg River and its waterways, but was shy and not noisy. A laying female was taken in March, and another with enlarged ovary in April. Mr. Richardson brought in a nest with the adult on May 3 at Bernhard Camp. The nest was in the edge of an area of cane grass fringing the river. It was placed amongst the stems of the grass, supported on all sides by them. The nest itself was a smooth oval structure with an irregular, untidy opening on the side. It was composed entirely of large, dry, flat leaves of a grass. It measured 210 by 380 mm. high outside, and 145 by 250 mm. high inside. It contained two eggs that were: shape of one broadly ovate, the other blunter and more rounded; shell smooth; gloss slight; color white; size 31 by 26.1 and 33.1 by 25.4 mm.

The two males had rudimentary left testes.

Centropus phasianinus propinquus Mayr

Cyclops Mountains: 1 ♂; April 5.

Found at 150 meters altitude.

WING.—194 mm.

This specimen is practically topotypical.

Tyto tenebricosa (Gould)

No specimens were secured, but the feet and feathers of this species were commonly used as ornaments by the people of the Bele Valley, and some of these ornaments were brought back. At the 2,800-meter Camp, resting places were found in cavities under tree roots, where feathers of this owl were found, and many remains of pellets, most of the latter consisting of mammal remains. Above 3,800 meters on Mt. Wilhelmina, shed feathers of this owl and an abundance of pellets were found in the crevices under the profusion of rocks there, but only one bird was seen and that one flushed out of range. The pellet remains were composed almost entirely of mammal material.

Podargus papuensis Quoy and Gaimard

Bernhard Camp, 6 km. southwest: 1 ♂; February 16.

Bernhard Camp, 4 km. southwest: 1 ♂; March 13.

Bernhard Camp: 5 ♂, 3 ♀; March 19–May 1.

Cyclops Mountains: 2 sex?, 1 sex? fledgling; April 2, October 17.

Hollandia: 1 ♂, 1 ♀; July 15, October 28.

Found from sea level to 1,200 meters altitude.

Altitude	WING MEASUREMENTS	
	Male	Female
1,200 meters	296 mm.	
850 "	311	
50 "	268, 286, 292, 296,	283, 286, 295
	303	
Sea level	292	282

Birds from higher altitudes are larger than the average of those from lower altitudes, but the difference is small.

For a discussion of the size variation in this species, which is irregular in relation to geographical distribution, see 1937, Amer. Mus. Novitates, No. 939, p. 8.

One March and one May female were in breeding condition.

Podargus ocellatus ocellatus

Quoy and Gaimard

Bernhard Camp, 4 km. southwest: 1 ♀; March 29.

Bernhard Camp: 3 ♀, 1 sex?; March 22–May 5.

Hollandia: 2 ♂, 1 ♀, 1 sex?; July 9–October 25.

Found up to 850 meters altitude.

WING.—♂ 179 mm., 181; ♀ 181, 185, 185, 188.

Of three stomachs examined, one contained a frog, and two, large insects. A March and a May female had enlarged ovaries.

Aegotheles bennettii wiedenfeldi

Laubmann

Bernhard Camp: 1 ♀; April 26.

Found at 50 meters altitude.

WING.—♀ 139 mm.

This specimen agrees in color with one from Holnicote Bay.

The previous most westerly record of this form was on the Sepik River.

Aegotheles albertisii archboldi Rand

Aegotheles albertisii archboldi RAND, 1941, Amer. Mus. Novitates, No. 1102, p. 10–9 km. northeast of Lake Habbema.

Mt. Wilhelmiana, 7 km. east: 1 ♂; September 14.

Lake Habbema, 9 km. northeast: 7 ♂, 10 ♀; October 10–November 5.

Bele River Camp: 8 ♂, 4 ♀; November 13–28.

Found from 2,200 to 3,600 meters altitude.

WING.—♂ (10) 115–126 mm. (av. 119.3); ♀ (10) 115–127 (av. 121.7).

Aegotheles insignis insignis Salvadori

Lake Habbema, 9 km. northeast: 1 ♂, 1 ♀; October 14, 26.

Bele River Camp: 2 ♂, 2 ♀, 1 ♀ fledgling; November 11–28.

Found from 2,200 to 2,800 meters altitude.

WING.—♂ 165 mm., 170, 171; ♀ 171, 172, 174.

None of these birds is in the brown phase of plumage; one male and three females, including the fledgling, are in the rufous phase; the others are intermediate rufous brown in color.

Races based on slight average size differences are never very satisfactory, and it seems advisable to synonymize *pulcher* with *insignis*. Hartert (1930, Nov. Zool., XXXVI, p. 95) points out that the two races differ only in size.

The following are the available measurements on the American Museum material:

	Male	Female
Vogelkop	165 mm.	161, 162
Wondewoi	169	
Weyland Mountains	164, 164	169, 170
North of Mt. Wilhelmiana	165, 170, 171	171, 172, 174
Huon Peninsula	165, 173	161
Southeast New Guinea	164, 166, 171,	(10) 165–180
	173, 175,	(av. 171.7)
	175, 177	

Hartert (*loc. cit.*) gives the wing measurement of the type of *insignis* as 155 mm., and Mayr gives the measurements of two Huon Peninsula birds (males) as 164 mm., 164 (1931, Mitt. Zool. Mus. Berlin, XVII, p. 695).

From the present data it appears that western New Guinea birds may average slightly smaller than east New Guinea birds, but the difference is too slight to recognize by name.

Two stomachs examined contained insect remains. No specimen was in breeding condition, but a fledgling was brought in by natives in November.

Caprimulgus macrurus yorki Mathews

Balim River Camp: 1 ♂; December 12.

Hollandia: 1 ♀; July 16.

Found at sea level and 1,600 meters altitude.

WING.—♂ 188 mm., ♀ 179.

The Balim River record from the secondary mid-mountain grassland was a surprise. The species was common about Hollandia.

Eurostopodus mystacalis mystacalis
(Temminck)

Bernhard Camp: 1 ♂; April 14.

Found at 50 meters altitude.

WING.—258 mm.

Eurostopodus papuensis astrolabae
Ramsay

Bernhard Camp: 1 ♂, 1 ♀; April 29, May 2.

Found at 50 meters altitude.

WING.—♂ 202 mm., ♀ 196.

These exhibit no significant differences when compared with other north New Guinea or with south New Guinea birds; for the status of the Arfak race, see Mayr and de Schauensee, 1939, Proc. Acad. Nat. Sci. Phila., XCI, p. 112.

Eurostopodus archboldi
(Mayr and Rand)

Habbema Lake: 1 ♂ ad.; August 22, 1938.

Bele River, 18 km. north of Lake Habbema: 1 ♂ ad., 1 ♀ ad.; November 19, 1938.

Taken at 3,225 meters. The specimens recorded at the Bele River Camp (2,200 meters) were brought by natives, probably from higher altitudes.

MEASUREMENTS

	Male	Female
Wing	196 mm., 205	209
Tail	141, 145	144

This species was hitherto known only from the three specimens from Mt. Tafa, southeast New Guinea, taken by the 1933 Archbold Expedition.

The present three specimens are very worn, and the spotting has almost disappeared from the breast. Wear and fading also probably account for much of the difference in color between these and the three specimens from Mt. Tafa which are only slightly worn. The Snow Mountains birds have paler spotting on the abdomen, and the scapulars and inner secondaries especially are much paler in the rufous spotting and have the gray areas much whiter. That there is actually a slight difference between these populations is indicated by the slightly finer black markings and vermiculations in the scapulars and inner secondaries, and by the whiter tail. It is advisable, however, not to separate them until birds in strictly comparable plumages can be compared.

In the original description (1935, Amer. Mus. Novitates, No. 814, p. 5), the tail was stated to be double-rounded. In the present series one male has the tail strongly double-rounded, the central pair of rectrices being 8 mm. shorter than the longest; in the other male and the female the tail is simply rounded.

The November female was laying.

Mearnsia novaeguineae mamberana
(Neumann)

Bernhard Camp: 12 ♂, 5 ♀, 1 sex?; March 23–April 28.

Hollandia: 1 ♀; July 2.

Found up to 50 meters altitude.

WING.—♂ (10) 119–126 mm. (av. 123.1); ♀ 119, 120, 122, 125, 126, 130.

Three specimens, apparently immature, are acquiring the iridescent throat; dark brownish gray, without iridescence, is being replaced by the iridescent throat feathers.

There is some variation in the iridescence of the throat, but in no example is

it as intensely iridescent as the back, as is said to be the case with *bürgersi*.

A common swift at Bernhard Camp, usually feeding in loose flocks of ten or twenty. They were often high over the second growth, but occasionally came down low over the marshes.

***Collocalia esculenta* subspecies?**

Mt. Wilhelmina, 7 km. east: 1 ♂, 1 sex?; August 29, September 9.

Lake Habbema: 1 ♀, 5 sex?; August 6-21.

Lake Habbema, 9 km. northeast: 1 ♂, 3 ♀; October 16-November 4.

Bele River Camp: 1 ♂, 2 ♀; November 20, 22.

Bernhard Camp, 15 km. southwest: 1 ♀; January 16.

Bernhard Camp, 5 km. southwest: 2 ♂, 1 ♀; February 24, 27.

Sentani Lake: 1 ♂; July 2.

Hollandia: 2 ♂ ad., 7 ♂ imm., 4 ♀ ad., 6 ♀ imm., 3 sex? ad., 1 sex? imm.; June 16-July 15.

Found from sea level to 3,600 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female	Sex?
3,600 meters	120 mm.		112
3,225 "			110, 113, 115, 118
2,800 "		114, 114, 119	
2,200 "	114, 118	110, 113	
2,150 "		107, 108	
1,200 "	108, 110		112
Sea level	97, 99, 102, 102	98, 98, 99, 104	99, 103, 105

The following illustrates the altitudinal variation in the species in southeast New Guinea:

WING MEASUREMENTS

Altitude	Male	Female
3,600 meters	109 mm., 110, 110, 110	108
2,800 "	104, 106	
2,400 "	104, 104, 105, 106, 107	103, 104, 107
2,000 "	102, 102, 103	103
1,250 "	103	102, 106
900 "		109
450 "	103	101, 101

It does not seem practical to separate altitudinal races on the basis of size. I am

deferring a critical review of this species until the New Guinea collecting is finished.

This was a fairly common species, feeding over the open ground and about the tops of the forest trees, usually in parties of a half dozen or so but sometimes up to about twenty. At Lake Habbema in October I saw a solitary pair carrying material to a nest in construction on a little sheltered rock face in hilly grass country.

***Collocalia hirundinacea* Stresemann**

Mt. Wilhelmina, 2 to 7 km. east: 8 ♂, 6 ♀; September 7-29.

Lake Habbema: 4 ♂, 7 ♀; August 3-27.

Bele River Camp: 3 ♂, 5 ♀; November 11-December 3.

Balim River: 3 ♂, 6 ♀; December 10-17.

Found from 1,600 to 4,000 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
3,600-4,000 meters	129 mm., 130, 132, 134, 135, 135, 135, 137	125, 128, 130, 130, 132, 134
3,225 meters	121, 124, 127, 128	121, 122, 123, 123, 127, 129, 130
2,200 "	121, 121, 124	120, 124, 127
1,600 "	118, 119, 120	113, 115, 116, 118, 119, 122

The birds from 1,600 meters altitude tend to be slightly darker above and below than those from higher altitudes, but one 1,600-meter bird is very pale. The degree of feathering on the tarsus and the amount of concealed white in the feathers of the back vary. The type of *hirundinacea* compared with the present series is slightly more brownish below and somewhat more bluish black, less greenish black, above. In color the present series compares well with southeast New Guinea birds.

As with many other species in New Guinea, there is a great altitudinal variation in this species. The name *C. h. excelsa* Ogilvie-Grant is available for the large high-mountain form; *hirundinacea* applies to a small lowland form. But if two altitudinal forms are to be separated,

chiefly on size, the question of what birds are to be included in each race is difficult to settle satisfactorily.

This was a fairly common bird over both forest and open country, usually feeding in flocks up to twenty or thirty in number. On December 3 Mr. Richardson was exploring a cave for bats and found three nests of this species. The cave was a perpendicular sink hole about fifteen feet across with a chamber thirty feet across opening up at the bottom. On ledges of the chamber walls in subdued light were three nests, each with one well-grown young. One adult was also collected. The nests were bulky, solid affairs, flattened on the bottom and back where they rested against the ledge, otherwise just masses of material with a depression on the top. The nests were composed of mosses, lichens, filmy ferns and some rootlets, the lining being of similar but finer material felted together to give a smooth surface. The material was packed and felted together with no salivary glue apparent. They were surprisingly bulky for swifts' nests: one measured outside 110 by 75 mm. deep; inside 65 by 30 mm. deep. Another measured outside 100 by 60 mm. deep; inside 60 by 20 mm. deep.

***Collocalia vanikorensis granti* Mayr**

Bernhard Camp, 4 km. southwest; ♀; April 2.

Bernhard Camp: 6 ♂, 9 ♀, sex?; March 23–May 3.

Hollandia: 3 ♂, 3 ♀; July 11–15.

Found from sea level to 850 meters altitude.

WING.—♂ (9) 111–120 mm. (av. 116.1); ♀ (10) 110–120 (av. 114.9).

TAIL.—Central feathers (10) 40–44 mm. (av. 42.4); outer feathers (10) 48.5–51 mm. (av. 49.6).

These birds differ from a series from southeast New Guinea in the paler underparts and darker, more blackish, upperparts; the type specimen is darker below and paler above than southeast New Guinea birds.

Probably these birds could be described as another race, but I hesitate to do so at this time.

***Collocalia whiteheadi papuensis* Rand**

Collocalia whiteheadi papuensis RAND, 1941, Amer. Mus. Novitates, No. 1102, p. 10–15 km. southwest of Bernhard Camp, Idenburg River.

Bernhard Camp, 15 km. southwest: 1 ♂, 1 ♀; January 20.

Bernhard Camp: 8 ♂, 2 ♀; March 23–May 3.

Hollandia: 1 ♀; July 11.

Found from sea level to 1,800 meters altitude.

WING.—♂ (9) 124–142 mm. (av. 134.1); ♀ 130, 134.

The two birds from the 1,800-meter Camp were taken one night as they came fluttering about an illuminated white cloth set for moths. They were common at Bernhard Camp, feeding in parties of twenty to thirty but usually so high as to be out of gunshot. Occasionally, however, the flocks fed low over the marshes. *Chaetura novaeguineae* was often feeding with them, and *C. vanikorensis* occasionally.

***Hemiprocne mystacea mystacea* (Lesson)**

Bernhard Camp, 4 km. southwest: 2 ♂, 3 ♀; March 8–29.

Bernhard Camp: 1 ♂, 2 ♀; March 23.

Found up to 850 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
850 meters	234 mm., 245	228, 231, 234
50 "	240	233, 239

At the 850-meter Camp a few were usually to be found perched on high, commanding, dead branches along the stream, from which they hawked out after insects, somewhat in the manner of *Artamus*.

***Alcyone azurea ochrogaster* Reichenow**

Bernhard Camp: 2 ♂, 1 ♀; April 12–30.

Sentani Lake: 1 sex?; November 20.

Hollandia: 1 sex?; July 20.

Found up to 50 meters altitude.

WING.—♂ 73 mm., 78; ♀ 74; sex? 74, 77.

The size difference between this race and *lessonii* pointed out by Stresemann and Paludan (1936, Mitt. Zool. Mus. Berlin, XXI, p. 228) does not appear to hold

good, but the two forms are quite separable by color.

This kingfisher was found along the edge of wooded waterways, perched low in the shrubbery. One stomach contained a shrimp. The April specimens were not breeding.

***Alcyone pusilla laetior* Rand**

Alcyone pusilla laetior RAND, 1941, Amer. Mus. Novitates, No. 1102, p. 11—Bernhard Camp, Idenburg River.

Bernhard Camp: 2 ♂ ad., 2 ♀ ad. April 10–30.

Found at 50 meters altitude.

WING.—♂ 51 mm., 52; ♀ 51, 51.

At Bernhard Camp this tiny kingfisher was fairly common, usually seen perched low over the water in its bordering shrubbery or darting across the narrow waterways through the forest. One stomach contained fish; one contained insect remains. Two April females had their gonads somewhat enlarged.

***Ceyx lepidus solitarius* Temminck**

Bernhard Camp, 4 km. southwest; 2 ♂; March 11.

Bernhard Camp: 4 ♂, 3 ♀, 1 sex?; April 11–May 4.

Cyclops Mountains: 1 sex?; April 9.

Hollandia: 2 sex?; November 24.

Found from near sea level to 850 meters altitude.

WING.—♂ 53 mm., 54, 54, 54, 54, 56; ♀ 54, 54, 58.

Of six stomachs examined, all contained insects, one of which was a locust. No specimens were breeding.

***Syma torotoro torotoro* Lesson**

Bernhard Camp, 4 km. southwest: 2 ♂; March 12, 16.

Hollandia: 2 ♂, 2 ♀; July 13–November 3.

Found near sea level and at 850 meters altitude.

WING.—♂ 79 mm., 80, 81, 81, 82; ♀ 77, 80.

Two stomachs examined contained insects. The March birds were not breeding.

***Syma megarhyncha wellsi* Mathews**

Bele River Camp: 1 ♂; November 30.

Bernhard Camp, 10 and 18 km. southwest: 2 ♂; February 4, 21.

Found from 1,500 to 2,200 meters altitude.

WING.—♂ 88 mm., 90, 91.

All these specimens, apparently adult, have the culmen conspicuously marked with blackish.

Compared with a series of *megarhyncha* from southeast New Guinea, these are bluer, less greenish on the back; two are darker below, one is not darker.

This is a forest kingfisher that apparently spends its time well up in the trees. Its call is a loud, rich trill, similar to that of *Syma torotoro* and also recalling that of *Cacomantis pyrrhophanus*. The bird sits quietly concealed in the leaves for long periods, is shy and I found it very difficult to locate. Thus it is more common than the small number of specimens indicates. One stomach contained a lizard. The November specimen was not breeding.

***Melidora macrorhina jobiensis* Salvadori**

Bernhard Camp, 4 km. southwest: 2 ♂, 3 ♀; March 9–April 6.

Bernhard Camp: 3 ♂, 3 ♀; April 16–May 5.

Cyclops Mountains: 2 sex?; April 12, December 15.

Hollandia: 1 ♂; July 2.

Found up to 850 meters altitude.

WING.—♂ 112 mm., 116, 116, 118, 120, 120; ♀ 114, 116, 118, 121, 121, 122.

This was a fairly common forest kingfisher. Of four stomachs examined, three contained insects only, and one, remains of a frog and a large walking-stick insect. The March, April, May and July specimens were not in breeding condition, though a March and a May female had slightly enlarged gonads.

***Clytoceyx rex rex* Sharpe**

Bernhard Camp: 2 ♀ ad.; April 11, 12.

Found at 50 meters altitude.

WING.—164 mm., 167.

The race *imperator* from the south slope of the Snow Mountains is considerably

larger. Paludan (1935, O.M.B., XLIII, p. 54) described *septentrionalis*, based on three specimens from the Sepik area and the Doorman River, as paler, less intensely colored below than *rex*. This character is not apparent in the present birds; indeed, one is darker than most southeast New Guinea birds.

The stomach contents of one bird were earthworms. Neither showed signs of breeding.

Sauromarptis gaudichaud

(Quoy and Gaimard)

Bernhard Camp: ♂, ♀; March 19–May 20.

Cyclops Mountains: ♂, ♀; April 2–October 18.

Sentani Lake: ♀; December 5.

Hollandia: ♂, ♀; June 23–October 17.

Found up to 150 meters altitude.

WING.—♂ (10) 128–141 mm. (av. 135.8); ♀ (10) 130–140 (av. 135.5).

Two stomachs examined contained insects; another, a lizard, and another, insects and a crab. Only three March specimens showed some enlargement of gonads.

Halcyon sancta sancta

Vigors and Horsfield

Balim River Camp: 2 ♂ ad.; December 14.

Bernhard Camp: 3 ♂ imm.; April 13–May 21.

Cyclops Mountains: 2 sex?; April 6, 17.

Hollandia: 4 ♂ ad., 1 ♂ imm., 3 ♀ ad.; June 26–July 25.

Found from sea level to 1,600 meters altitude.

WING.—♂ ad. 85 mm., 90, 91, 92, 93, 93; ♀ ad. 92, 92, 97.

***Tanysiptera galatea meyeri* Salvadori**

Bernhard Camp: 2 ♂ ad., 2 ♀ ad., 2 ♀ imm.; March 25–May 5.

Found at 50 meters altitude.

WING.—♂ ad. 106 mm., 107; ♀ ad. 102, 103.

One March female had slightly enlarged gonads; none of the other specimens showed signs of breeding.

***Merops ornatus* Latham**

Bernhard Camp: 4 ♂ ad., 1 ♂ imm., 2 ♀ ad., 1 ♀ imm.; April 11–May 4.

Cyclops Mountains: 2 sex? ad., 6 sex? imm.; March 23–April 21.

Hollandia: 3 ♂ ad., 1 ♂ imm., 1 ♀ ad., 2 sex? imm.; June 22–July 11.

Found up to 150 meters altitude between March 23 and July 11.

WING.—♂ ad. 104 mm., 105, 108, 110, 110, 111, 111, 112, 115; ♀ 106, 107, 107.

This bee eater was common in the second growth about Bernhard Camp in April.

***Merops philippinus salvadorii* Meyer**

Cyclops Mountains: 2 sex?; April 2, 6.

Found at 150 meters altitude.

WING.—117 mm., 120.

Eurystomus orientalis pacificus

(Latham)

Bernhard Camp, 4 km. southwest: 1 ♀ ad.; April 4.

Bernhard Camp: 4 ♂ ad., 2 ♀ ad.; March 20–April 18.

Cyclops Mountains: 5 sex? ad., 1 sex? imm.; March 20–April 28.

Hollandia: 1 ♂ ad., 1 ♂ imm., 4 ♀ ad., 2 ♀ imm.; June 21–July 19.

Found from sea level to 850 meters altitude between March 20 and July 11.

WING.—♂ ad. 184 mm., 186, 191, 192, 195; ♀ ad. 191, 191, 192, 194, 195, 195.

***Rhyticeros plicatus jungei* Mayr**

Bernhard Camp, 6 km. southwest: 1 ♂, 1 ♀; February 21, 22.

Bernhard Camp, 4 km. southwest: 2 ♂, 2 ♀; March 8–April 5.

Bernhard Camp: 2 ♂, 5 ♀; March 24–April 19.

Cyclops Mountains: 5 ♂; April 1–October 28.

Hollandia: 2 ♂, 1 ♀; July 8–18.

Found from sea level to 1,200 meters altitude.

WING.—♂ ad. (10) 402–471 mm. (av. 438.9); ♀ ad. (9) 373–414 (av. 396.3).

***Pitta macklotii habenichti* Finsch**

Hollandia: 1 ♂ ad., 1 ♀ ad.; July 7, October 15.

Bernhard Camp: 2 ♂ ad., 1 ♀ ad., 1 ♀ imm.; April 11, 23.

Bernhard Camp, 4 km. southwest: 3 ♂ ad., 1 ♀ ad., 1 ♀ imm.; March 13–April 6.

Found from near sea level to 850 meters altitude.

WING.—♂ 103 mm., 104, 105, 107, 109, 111, 111; ♀ 103, 106, 109.

The Bernhard Camp males are slightly darker red on the nape than are males from the Hollandia area and show little variation in this character. The Bernhard Camp females are much duller, more brownish red on the nape than the males, but the Hollandia female is only slightly paler red than the male.

Pitta novaeguineae novaeguineae
Müller and Schlegel

Hollandia: 1 ♀ ad.; October 30.

Cyclops Mountains: 2 ♀ ad.; December 5.

Bernhard Camp: 1 ♀ ad.; May 5.

Taken up to 150 meters altitude.

WING.—97 mm. 98, 100, 106.

Hirundo tahitica frontalis
Quoy and Gaimard

Hollandia: 1 sex?; 1938.

Bernhard Camp: 1 ♂, 1 ♀; April 20, May 2.

Balim River Camp; 1 ♂, 3 ♀; December 9–13.

Taken near sea level and at 1,600 meters altitude.

WING MEASUREMENTS		
Altitude	Male	Female
Near sea level	111 mm.	107
1,600 meters	110	106, 110, 111

At Hollandia in June the swallow was occasionally seen feeding along the sea shore. In the Balim Valley in December this species was fairly common feeding over the grasslands.

Petrochelidon nigricans nigricans
(Vieillot)

Cyclops Mountains: 3 sex? imm.; April 17.

Taken at 150 meters altitude.

WING.—105 mm., 110, 112.

Two of these show wing moult.

Campochaera sloetii sloetii (Schlegel)

Bernhard Camp: 3 ♂ ad., 1 ♀? ad.; March 18–29.

Found at 50 meters altitude.

WING.—♂ 103 mm., 104, 104; ♀? 103.

I have already reported this series, which is the first record of this species for north New Guinea (1941, Amer. Mus. Novitates, No. 1102, p. 11).

Lalage atrovirens atrovirens (Gray)

Hollandia: 1 ♂, 2 sex?; June 21–July 24.

Cyclops Mountains: 1 ♂, 2 sex?; April 23–26.

Bernhard Camp: 1 ♂, 3 ♀; April 23–May 4.

Bernhard Camp, 4 km. southwest: 1 ♂, 2 ♀; March 12, April 6.

Bernhard Camp, 6 km. southwest: 2 ♂, 2 ♀; February 13–March 5.

Found from near sea level to 1,200 meters altitude.

WING.—♂ ad. 96 mm., 97, 97, 98, 99, 100; ♀ ad. 95, 95, 96, 98, 99.

These agree well with three males and two females from Mysol.

A breeding female was taken in April.

Edolisoma melan melan (Lesson)

Hollandia: 5 ♂, 2 ♀; June 16–July 11.

Bernhard Camp: 5 ♂, 2 ♀; April 25–May 3.

Bernhard Camp, 4 km. southwest: 1 ♂; March 29.

Found up to 850 meters altitude.

WING.—♂ (10) 115–127 mm. (av. 120.9); ♀ 118, 119, 120.

The females fall within the range of variation of a series of females from Kapaur and Arfak, though slightly smaller. Stresemann and Paludan (1932, Nov. Zool., XXXVIII, p. 232) have said that Jobi Island birds are the same as north New Guinea birds, but three specimens from Jobi in the American Museum are considerably darker and more russet brown than Arfak and north New Guinea birds.

An April female had an enlarged ovary.

Edolisoma schisticeps moszkowskii
Neumann

Hollandia: 1 ♂ ad.; June 29.

Bernhard Camp: 3 ♂ ad.; April 24–May 4.

Bernhard Camp, 4 km. southwest: 1 ♂ ad., 2 ♀; March 14–April 4.

Bernhard Camp, 6 km. southwest: 1 ♂ ad., 1 ♀; February 17.

Found from near sea level to 1,200 meters altitude.

WING.—♂ 105 mm., 107, 110, 111, 111, 112; ♀ 103, 108, 114.

For comparison I have only one female from Etappenberg with which the present females agree. The males vary somewhat in the blackness of the throat, but Hartert (1932, Nova Guinea, XV, p. 459) says that a male from the Mamberamo (Pionierbivak) is less dark on the throat than Sepik area birds, so I am provisionally listing these birds as *moszkowskii*.

Three stomachs examined contained the remains of fruit.

Edolisoma morio incertum (A. B. Meyer)

Bernhard Camp: 1 ♂ imm., 1 ♀ imm.; April 17.

Bernhard Camp, 4 km. southwest: 1 ♂ ad., 1 ♂ imm., 2 ♀; March 13–April 2.

Found at 50 and 850 meters altitude.

WING.—♂ ad. 111 mm.; ♂ imm. 107, 114; ♀ ad. 112, 114; ♀ imm. 113.

For a list of the races of *morio*, see Stresemann, 1939, O.M.B., XLVII, p. 125.

The immature female still largely retains the barred plumage of the underparts; the immature males in first year plumage resemble the adult male except for the wing, which has not been renewed, and one has a few barred feathers in the breast. The tail apparently has been renewed.

One stomach examined contained fruit. An April female was in breeding condition.

Edolisoma montanum montanum
(A. B. Meyer)

Bernhard Camp, 6 to 8 km. southwest: 4 ♂ ad., 3 ♀ ad.; February 18–March 4.

Bernhard Camp, 15 km. southwest: 2 ♂ ad., 1 ♂ imm., 1 ♀ ad.; January 22–30.

Bernhard Camp, 18 km. southwest: 1 ♂ ad.; November 28.

Bele River Camp: 2 ♂ ad.; November 22, 28.

Lake Habbema, 9 km. northeast: 1 ♂ ad., 1 ♀ ad.; October 17.

Found from 1,200 to 2,800 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
1,200–2,200 meters	134 mm., 135, 136, 136, 137	127, 128, 128, 130
2,800 meters	141	137

Up to 2,200 meters there is no correlation between size and altitude; the two specimens from above that are distinctly larger.

The long wing places these birds with *montanum*, with which they agree in other respects. One male from the Bele River Camp, which appears otherwise adult, has some of the breast feathers partly gray and partly black.

One immature male in first year plumage is similar to the female but differs in the dark subterminal and white terminal tips to the breast feathers, in the white barred under tail coverts, in the secondaries tipped and edged with whitish, in having some fuscous and white upper wing coverts, and in the pointed tail feathers with the outer ones white-tipped.

A fairly common species of the upper parts of the forest trees. It moves about in parties of two to four, is noisy and consequently conspicuous, but is continually moving and difficult to secure. Of five stomachs examined, all contained fruit.

Coracina boyeri boyeri (Gray)

Bernhard Camp: 4 ♂, 2 ♀; April 23–30.

Found at 50 meters altitude.

WING.—♂ ad. 123 mm., 127, 128, 129; ♀ 123, 125.

Birds from Misol Island, Jobi Island, Bernhard Camp, westward to Collingwood Bay, all agree in the white lores of the females; a Collingwood Bay female has a paler wing-lining, like *subalaris*, but there is no significant variation in the rest of the series in this. Birds from the western part of the range are slightly darker; males from the eastern part of the range are

slightly larger (Kumusi River, wing ♂ 131 mm., 131, 131, 132).

Coracina caeruleogrisea strenua
(Schlegel)

Hollandia: 2 ♂; July 1.
Bernhard Camp, 4 km. southwest: 5 ♂, 2 ♀; March 16–April 4.
Bernhard Camp, 6 km. southwest: 3 ♂, 1 ♀; February 16–22.
Bernhard Camp, 15 km. southwest: 1 ♀; January 22.
Balim River Camp: 3 ♀; December 14–17.
Bele River Camp: 1 ♂, 1 ♀; November 12, 30.

Found near sea level at Hollandia and from 850 to 2,200 meters altitude on the northern slopes of the Snow Mountains.

There is some variation in size with altitude as the following measurements show:

WING MEASUREMENTS		
Altitude	Male	Female
2,200 meters	172 mm.	174
1,600 "		164, 166
1,200 "	173, 177, 178	166
850 "	166, 166, 167, 170	165
Near sea level	162, 162	

Coracina papuensis papuensis (Gmelin)

Hollandia: 2 ♂, 2 ♀; June 21–July 25.
Cyclops Mountains: 5 sex?; March 29–May 1.
Bernhard Camp: 5 ♂, 6 ♀; March 19–April 25.

Found up to 150 meters altitude.

WING.—♂ 137 mm., 140, 142, 143, 144, 145, 145; ♀ 132, 133, 135, 135, 136, 136, 137.

The present series averages slightly darker and with slightly more black in the forehead than five old skins from the Vogelkop.

A fairly common bird of the second growth along the waterways. Three females in breeding condition were taken in April.

Coracina longicauda grisea Junge

Bernhard Camp, 15 km. southwest: ♂ ad., 3 ♀ ad.; January 9–15.
Bernhard Camp, 18 km. southwest: ♂ ad., 3 ♀ ad.; February 1–5.

Bele River Camp: 2 ♂ ad., 1 ♀ ad.; November 22–28.

Lake Habbema, 9 km. northeast: 5 ♂ ad., 1 ♂ imm., 3 ♀ ad.; October 14–30.

Found from 1,800 to 2,800 meters altitude.

WING.—♂ (10) 162–176 mm. (av. 170.6); ♀ (9) 163–170 (av. 165.5).

The size of this series agrees well with the measurements given for *grisea* by Junge (♂ 167 mm., 169, 174; ♀ 159, 161, 163, 165; 1939, Nova Guinea, [N.S.] III, p. 6). Southeast New Guinea birds measure: ♂ (10) 176–188 mm. (av. 182); ♀ 175, 177, 178. There appears to be no other character for this race.

Motacilla cinerea caspica (Gmelin)

Bele River Camp: 1 ♂, 1 ♀; November 16, 27.

Balim River Camp: 1 ♂, 1 ♀; December 12, 15.

Collected at 1,600 and 2,200 meters altitude; one seen at 2,800 meters in October.

This species is rare in New Guinea collections. One example was seen along a small rocky stream at 2,800 meters October 18; the species was occasionally seen along the stones of the Bele River, 2,200 meters, in November where the stream flowed through both open grass country and forest; it was fairly common in the garden country along the Balim River, 1,600 meters, in December.

Anthus gutturalis wollastoni
Ogilvie-Grant

Mt. Wilhelmina to 7 km. northeast: 6 ♂ ad., ♂ imm., 4 ♀ ad.; August 16–September 28.

Lake Habbema: 4 ♂ ad., ♂ imm., 4 ♀ ad.; August 1–25.

Lake Habbema, 9 km. northeast: 1 ♀ imm.; November 5.

Found from 3,225 to 4,500 meters altitude; the specimen brought in by natives at the 2,800-meter Camp undoubtedly came from higher.

WING.—♂ ad. 96 mm., 96, 97, 98, 99, 100, 102, 103; ♀ ad. 95, 95, 96, 96, 96, 97, 97.

This form has been collected twice before: by the British Snow Mountains

Expedition in 1913 at 8,000 feet on the slopes of Mt. Carstensz (1915, Ibis, Jub. Sup., No. 2, p. 47) and in 1909 and 1913 on the south slopes of Mt. Wilhelmina by the Netherland Expeditions (Junge, 1939, Nova Guinea, [N.S.] III, p. 10).

Worn specimens are much duller above and paler below than fresh skins. In some skins there are a few distinct black marks on the side of the neck, in the area that is black in *gutturalis*; in others this is almost absent.

A young bird with tail partly grown taken November 5 has the upperparts tinged with richer olive brown than the adult; the underparts are much deeper, warmer ochraceous, with heavy black streaking on the breast and indistinct streaking on the flanks. Apparently the wings and tail are not renewed when the bird moults out of the juvenal plumage.

This pipit was similar in habits to *A. g. gutturalis*. It was common at the higher altitudes where the barren ridges were covered with short sparse grass, and it was also commonly found up onto the talus slopes and the rocky areas above continuous grass. Here it was found in couples or loose parties of four or five. On the Wamena plains and about Lake Habbema it was scarcer but still fairly common and usually in couples on the more barren ridges and the open and bare places in the marsh where it could walk about on the ground but still have a clear view. It was wary and often difficult to secure. Frequently these birds perch on the tops of bushes and trees.

Birds in breeding condition were taken in August and September.

The stomach contents of one bird consisted of insects and small seeds.

Saxicola caprata belensis Rand

Saxicola caprata belensis RAND, 1940, Amer. Mus. Novitates, No. 1072, p. 4—Lake Habbema, 3,225 meters, Snow Mountains.

Bele River Camp: 1 ♂ ad., 2 ♀ ad.; November 25–December 2.

Balim River Camp: 4 ♂ ad., 3 ♀ ad.; December 8–16.

Found from 1,600 to 2,300 meters altitude.

WING.—♂ 79 mm., 82, 83, 84, 84; ♀ 79, 81, 81, 81, 82.

In the Balim and Bele valleys the stonechat was a fairly common open-country bird where the grassland was interrupted with shrubbery, rocks and stumps.

Saxicola caprata aethiops (Sclater)

Lake Sentani: 1 ♂ ad.; March 23.

Found near sea level.

WING.—75 mm.

Turdus poliocephalus versteegi Junge

Mt. Wilhelmina to 2 km. east: 2 ♂ ad., 1 ♀ ad.; September 14–27.

Lake Habbema: 3 ♂ ad., 2 ♂ imm., 2 ♀ ad., 1 ♀ imm.; August 3–23.

Found from 3,225 to 4,200 meters altitude.

WING.—♂ ad. 142 mm., 143, 146; ♂ imm. 136; ♀ ad. 138, 138, 139; ♀ imm. 133.

Besides the larger size and darker chin, throat and upper breast that Junge (1939, Nova Guinea, [N.S.] III, p. 9) lists as distinguishing *versteegi* from *papuensis*, the present series shows additional differences in the darker lower breast, abdomen and upperparts.

In respect to the rusty edgings of the underparts there is some variation. In the five males of the present series, two have a small amount while three almost lack it; it is also lacking in some southeast New Guinea males. The three adult females of the present series have the rusty edgings prominent; in one female they are as broad as in any southeast New Guinea bird and as richly colored.

Two of the immature birds (a male and a female) have full-grown wings and tail. Their plumage resembles in general the nestling plumage of *papuensis* (1937, Bull. Amer. Mus. Nat. Hist., LXXIII, p. 103), but the underparts are rich rufous, paling to whitish on the chin and belly, heavily spotted with blackish on breast and flanks. The soft parts are: iris dark, bill blackish streaked with yellow, gape yellow, feet olive yellow, nails dark gray.

At Habbema the blackbird was only fairly common and was shy. It fed on the

ground where the shrubs and grass were open enough or the grass short enough for it to hop about easily, but always near trees to which it flew when alarmed. On some of the barren ridges near forest, a shrub (*Gaultheria*) bore many small fleshy fruits, and some birds were usually found there feeding on the fruit, but there were no concentrations of these birds about such places.

Accustomed to thinking of this bird as flying to a near-by forest edge for shelter when alarmed, I was surprised to find it fairly common on Mt. Wilhelmina up to 4,100 meters. There only occasional low shrubs occurred, and the grass slopes began to break up and give way to the bare rock which stretched to the summit. In such places it fed on the short grass of the little ledges and when alarmed flew to jumbles of rocks or cliff faces for shelter. One was seen on a cliff face at 4,250 meters. These rocky fastnesses appear to take the place of trees for shelter, and as breeding birds were taken in such situations they probably nest on the cliff faces.

Birds in breeding condition were taken in August and September; two full-grown young were taken in August.

Amalocichla sclateriana occidentalis

Rand

Amalocichla sclateriana occidentalis RAND, 1940, Amer. Mus. Novitates, No. 1074, p. 1—Lake Habbema, 9 km. northeast, Snow Mountains.

Lake Habbema, 9 km. northeast: 1 ♂ ad., 1 ♂ imm., 1 ♀ ad., 1 ♀ imm.; October 14–19.

Found at 2,800 meters altitude.

Three of these were taken in mouse traps set on the ground in the forest.

Amalocichla incerta olivascentior Hartert

Bele River Camp: ♂ ad., ♂ imm., ♀ imm.; November 9–December 3.

Lake Habbema, 9 km. northeast: ♂ ad., ♀ ad.; October 12–November 8.

Found commonly at 2,200 and 2,800 meters altitude.

WING.—♂ ad. (10) 80–84 mm. (av. 82.2); ♀ ad. (8) 76–81 (av. 79.4).

The type of this race falls within the range of variation of a series from the Weyland Mountains.

The present series is somewhat lighter below and with more white in the underparts than the series from the Weyland Mountains, but there is some variation in this in each series, and the average difference is not great. On the upperparts and sides of the head the present series is very different in the much more olive, less brownish color. I would unhesitatingly describe them as new if it were not for the possibility of foxing having turned the Weyland Mountains specimens collected in 1931 browner and darker. A single male from Mt. Goliath collected in 1911, which one would expect to be like the present series, is as brown as the Weyland Mountains birds, though slightly paler. Old specimens of other races from south New Guinea and Arfak are evidently foxed and brownish, but the breast band is much paler than in Snow and Weyland mountains birds.

In the related *A. sclateriana* I have old and fairly fresh material from southeast New Guinea, and the change from olive to rufous in the upperparts, wrought by foxing, is pronounced.

Until my further work in New Guinea yields more data on foxing in *incerta*, I am referring the Wandamen Peninsula, Weyland Mountains, and Snow Mountains birds to *olivascentior*, distinguished by their darker breast and flanks.

A common bird of the forest floor, where it travels by hopping. Many were taken in mouse traps. Birds in breeding condition were taken in October (4), November (6) and December (1).

Melampitta lugubris lugubris Schlegel

Mt. Wilhelmina, 7 km. northeast: 1 ♂ ad.; September 22.

Lake Habbema: 1 sex? imm.; September 2.

Lake Habbema, 9 km. northeast: 4 ♂ ad., 2 ♂ imm., 3 ♀ ad., 1 ♀ imm.; October 14–31.

Bele River Camp: ♂ ad., 1 ♂ imm., ♀ ad., 1 ♀ imm.; November 9–27.

Bernhard Camp, 15 to 18 km. southwest: 1 ♂ ad., 1 ♀ ad.; February 2, 7.

Found from 2,150 to 3,600 meters altitude.

WING MEASUREMENTS

	Male ad.	Female ad.
Bele River to Mt. Wilhelmina	(10) 90-95 mm. (av. 93.3)	(10) 83-92 (av. 86.9)
Idenburg slopes	85	78

There is no correlation between size and altitude on the north slope of the Snow Mountains, 2,200 to 3,600 meters, but the birds from the Idenburg slopes, 2,150 meters, are smaller than the Snow Mountains birds.

The race *rostrata* (Utakwa River and Weyland Mountains) is characterized by its longer wing and much larger bill.

WING MEASUREMENTS

	Male	Female
Weyland Mountains ¹	88-95 mm.	84-89
Bele River to Mt. Wilhelmina	90-95	83-92
Utakwa River ²	89	
Southeast New Guinea	85-89	80-84
Idenburg slopes	85	78
Arfak Mountains ¹	83-85	78-83
Saruwaged Mountains ¹	80-85	75-79

On the basis of the wing measurement alone the present Bele River-Mt. Wilhelmina birds should be *rostrata* and the Idenburg slopes birds *lugubris*, but on the basis of the much smaller bill all the present series agrees with *lugubris* rather than *rostrata*.

Crateroscelis murina murina (Sclater)

Bernhard Camp, 6 km. southwest: 2 ♂, 2 ♀; February 15-March 5.

Bernhard Camp, 4 km. southwest: 7 ♂; March 12-30.

Bernhard Camp: 5 ♂, 3 ♀; March 23-May 3.

Hollandia: 1 ♂; June 30.

Taken from near sea level to 1,200 meters altitude.

The specimens from 850 and 1,200 meters average slightly more blackish on the back than those from Bernhard Camp and Hollandia (50 ± meters altitude). There is also a slight correlation between wing length and altitude as the following shows:

¹ Hartert, et al., 1936, Mitt. Zool. Mus. Berlin, XXI, p. 221.

² Ogilvie-Grant, 1915, Ibis, Jub. Sup., No. 2, p. 177.

Altitude

Altitude	Male	Female
850-1,200 meters	(7) 60-64 mm. (av. 61)	59, 59
50 ± "	(6) 57-63 (av. 60)	55, 57, 59

A breeding female was taken in March and another in April.

Crateroscelis nigro-rufa blissi

Stresemann and Paludan

Bernhard Camp, 15 km. southwest: 2 ♂ ad., 1 ♀ ad.; January 30.

Found at 1500 meters altitude.

Wing.—♂ 60 mm., 60; ♀ 58.

These specimens are slightly blacker on the upperparts, abdomen and flanks than the type of *blissi*. The series from the Weyland Mountains (Stein Collection, 1931) shows some variation, and one of them approaches southeast New Guinea birds (collected 1898-1906), differing chiefly in the somewhat darker flanks and under tail coverts.

Crateroscelis robusta sanfordi Hartert

Mt. Wilhelmina, 7 km. northeast: 1 ♂, 2 ♀; August 29-September 22.

Lake Habbema: 5 ♀; August 5-27.

Lake Habbema, 9 km. northeast: 8 ♂, ♀, 1 sex?; October 11-November 6.

Bele River Camp: ♂, ♀, 2 sex?; November 7-December 2.

Bernhard Camp, 15 to 18 km. southeast: ♂, ♀; January 15-February 5.

Found from 1,800 to 3,600 meters altitude.

WING MEASUREMENTS

	Altitude	Male	Female
North slope,	3,600 meters	71 mm.	68, 72
Snow	3,225 "		65-68
Mountains	2,800 "	63, 65-71	61-67
	2,200 "	61, 65-70	62-66
Idenburg slope	1,800-2,150 meters	60-65	57-64

This shows an increase in size with an increase in altitude, which is also true of the southeast New Guinea race.

The present series shows great variation in color, some specimens being darker, more brownish above and below, others being paler, more tawny below and more olive above. Two males with enlarged gonads taken at the same place illustrate

extremes of color variation. This indicates that it is not due to sex or age.

For comparisons I have seven males and three females of *steini* and two males and one female of *sanfordi*.

The series of *steini* shows little variation, which is surprising. The two male *sanfordi* differ considerably from each other. One is distinguishable from *steini* only on the basis of the slightly darker underparts; the other is much darker brown above and more brownish below.

In the present series some of the dark individuals are indistinguishable from *sanfordi*, while some of the lighter colored individuals are very similar to *steini*. Specimens which are as pale below as *steini* are usually more olive above, while specimens that are as brown above as *steini* are usually more richly colored below than that form.

Because of the variability in this species I am including the Weyland Mountains birds, the Wandamen Peninsula birds and the present series as *sanfordi*. Junge (1939, Nova Guinea, [N.S.] III, p. 10) has already listed birds from south of Mt. Wilhelmina as *sanfordi*.

Birds in breeding condition were taken in October (2) and November (4).

Androphobus viridis
(Rothschild and Hartert)

Lake Habbema, 9 km. northeast: 1 ♀ ad., 1 ♀ ? imm.; October 30, 31.

Bele River Camp: 2 ♂ ad., 2 ♀ ad., 1 ♀ imm.; November 13-29.

Brought in by natives at 2,200 and 2,800 meters altitude.

WING.—♂ ad. 68 mm., 69; ♀ ad. 65, 66, 66; ♀ imm. 67.

The type of this species, a male from Mt. Goliath collected by Meek in 1911, remained unique until Stein collected a male and a female in the Weyland Mountains in 1931 (1936, Mitt. Zool. Mus. Berlin, XXI, pp. 220, 221).

This species was described as an *Androphilus*.

Stresemann and Paludan (*loc. cit.*) erected the new genus *Androphobus* for this species and described the female.

The immature female differs from the

adult female in having the body plumage of a looser texture, the upperparts duller green, many of the feathers tipped with black, and the whole underparts dull blackish, tinged greenish on the sides of the body.

These specimens were all brought in by natives. Four stomachs examined contained insects only.

***Drymodes superciliaris nigriceps* Rand**

Drymodes superciliaris nigriceps RAND, 1940, Amer. Mus. Novitates, No. 1074, p. 1-4 km. southwest of Bernhard Camp, Idenburg River.

Bernhard Camp, 4 km. southwest: 1 ♂ ad., 3 ♀ ad., 1 ♀ imm.; March 15-April 4.

Bernhard Camp, 6 km. southwest: 1 ♂ ad.; February 13.

Found from 850 to 1,200 meters altitude.

WING.—♂ 93 mm., 97; ♀ 84, 85, 85.

***Eupetes castanonotus uropygialis* Rand**

Eupetes castanonotus uropygialis RAND, 1940, Amer. Mus. Novitates, No. 1074, p. 2-6 km. southwest of Bernhard Camp, Idenburg River.

Bernhard Camp, 6 km. southwest: 3 ♂ ad., 1 ♀ ad.; February 20-27.

Found at 1,200 meters altitude.

WING.—♂ 91 mm., 94, 96; ♀ 92.

Eupetes caeruleuscaens neumanni
Mayr and de Schauensee

Hollandia: 1 ♂ ad., 1 ♀ ad.; June 30, July 13.

Bernhard Camp: 1 ♂ ad., 2 ♀ ad., 1 ♀ imm.; March 20, April 21.

Found up to 50 meters altitude.

WING.—♂ 87 mm., 91; ♀ 85, 86, 86.

The Hollandia birds are practically topotypical, and the Idenburg birds agree with them.

None of these was in breeding condition.

***Eupetes leucostictus centralis* Mayr**

Lake Habbema, 9 km. northeast: 1 ♂ ad.; October 29.

Bele River Camp: 4 ♂ ad., 3 ♀ ad., 1 ♀ imm.; November 12-December 2.

Bernhard Camp, 15 km. southwest: 1 ♂ ad.; January 12.

Found from 1,800 to 2,800 meters altitude.

The difference between these birds and Wondiwoi birds (*mayri*) is not as great as that between Weyland Mountains (*centralis*) and Wondiwoi birds, but the present series agrees better with the Weyland Mountains birds and supports the slight differences which characterize this race. There is some variation in the present series, and a Mt. Goliath specimen collected in 1911 falls within this range of variation, indicating there is little foxing in the species.

Orthonyx temminckii dorsalis Rand

Orthonyx temminckii dorsalis RAND, 1940, Amer. Mus. Novitates, No. 1074, p. 2—Bele River, 18 km. north of Lake Habbema, Snow Mountains.

Lake Habbema, 9 km. northeast: 1 ♀ ad.; November 4.

Bele River Camp: 2 ♀ ad., 1 ♀ imm., 1 sex? imm.; November 9-24.

Bernhard Camp, 18 km. southwest: 1 ♀ ad.; February 8.

Found from 2,150 to 2,750 meters altitude.

WING.—♀ ad. 83 mm., 85, 87, 90; ♀ imm. 87.

The immature female is completing its body moult into first year plumage which resembles that of the adult. The wings are not renewed, but the tail is moulting. The immature (sex?) is still in nestling plumage; though the wing is full grown, the tail is still short.

Pomatorhinus isidori calidus (Rothschild)

Bernhard Camp: 4 ♂, 1 sex?; April 15-30.

Found at 50 meters altitude.

WING.—♂ 110 mm., 114, 116, 116.

There is little individual variation in this series. Compared with the type of *calidus* they are very similar, differing only in the very slightly duller, less rufescent color of the underparts and the sides of the head.

Stresemann and Paludan (1936, Mitt. Zool. Mus. Berlin, XXI, p. 223) have identified the Weyland Mountains birds as *calidus*. However, comparing the series of four Weyland Mountains birds (Wanggar and Menoo rivers) with the type and the

present series and with a series of Arfak birds, I find them closer to the latter, though somewhat intermediate. One Humboldt Bay specimen (Mayr Collection) is identical with the above Weyland Mountains birds. A series from the Madang area (Beck Collection) shows considerable variation. Some specimens are nearly as dark as some Bernhard Camp birds, except for the wing, while others are as pale as Arfak birds; south Snow Mountains and southeast New Guinea birds are pale.

It seems advisable to consider as *calidus* only the birds from the Siriwo River and Idenburg River (with dark underparts; throat not conspicuously paler than rest of underparts; and with dark outer edges to the remiges), *isidori* as occupying the rest of New Guinea, with a tendency toward *calidus* in the Weyland Mountains (Wanggar River) and the coastal area of north New Guinea.

Three April males were in breeding condition. At Bernhard Camp I saw these birds go to the large, pendent, domed nests that Stein (1936, Jour. für Ornith., LXXXIV, p. 38) erroneously credits to *Pitohui ferrugineus*.

Ifrita kowaldi kowaldi (De Vis)

Lake Habbema, 9 km. southwest: 3 ♂ ad., 3 ♀ ad.; October 15-22.

Bele River Camp: 1 ♂ imm., 2 ♀ ad.; November 11-25.

Bernhard Camp, 15 to 18 km. southwest: 5 ♂ ad., 4 ♀ ad., 2 ♀ imm.; January 9-February 7.

Found from 1,800 to 2,800 meters altitude.

This species shows a slight correlation between wing length and altitude, especially in the female, as the following shows:

Altitude	WING MEASUREMENTS	
	Male ad.	Female ad.
2,700-2,800 meters	83 mm., 85, 89	84, 85
2,200 meters		84, 84
2,150 "	83, 84	81
1,800 "	83, 83, 85	77, 78, 82

This series agrees well with a series from southeast New Guinea collected in 1933.

in the clear olive back, without brownish tinge, and in the outer edges of the remiges being only slightly brownish; it differs from the southeast New Guinea series in averaging slightly paler below, but there is considerable variation in this.

Malurus alboscapulatus aida Hartert

Bernhard Camp: 6 ♂ ad., 5 ♀ ad., 1 ♀ ? imm.; March 18–May 3.

Cyclops Mountains: 2 sex?; April 20, May 5.

Hollandia: 1 ♂ ad.; June 29.

Found up to 50 meters altitude.

WING.—♂ ad. 48–51 mm.; ♀ ad. 46–48.

TAIL.—♂ ad. 40 mm., 43, 46; ♀ 40, 40, 42, 43.

The Idenburg River birds compare well with birds from the vicinity of Lake Sentani, though the tail is slightly longer. The female is black in this race. The immature bird, in first year plumage, has a whitish chin and some whitish feathers in the abdomen.

It was especially interesting to find this warbler, which I had come to think of as a strictly grassland bird, common at Bernhard Camp where there was no grassland. Its habitat there was the dense floating marsh grass, and it was as common and as much at home in it as in the secondary grass areas about Hollandia. Three April males had enlarged gonads.

Malurus alboscapulatus balim Rand

Malurus alboscapulatus balim RAND, 1940, Amer. Mus. Novitates, No. 1072, p. 5—Balim River Camp.

Bele River Camp: 1 ♂ ad., 1 ♂ imm., 3 ♀ ad.; November 14–December 3.

Balim River Camp: 8 ♂ ad., 5 ♂ imm., ♀; December 9–17.

Found from 1,600 to 2,200 meters altitude.

WING.—♂ ad. (9) 49–52 mm. (av. 50.2); ♀ (8) 45–51 (av. 49.4).

TAIL.—♂ ad. (7) 44–48 mm. (av. 45.9); ♀ (8) 52–57 (av. 53.9).

BILL.—♂ ad. 13–14 mm.; ♀ 13–14.

A fairly common bird in the denser grassy areas, especially where shrubs occur. Seven of the birds taken in December were in breeding condition.

Todopsis cyanocephala dohertyi

Rothschild and Hartert

Hollandia: 3 ♂ ad., 2 ♀ ad., 2 sex? imm.; June 26–November 8.

Found near sea level.

WING.—♂ ad., 59 mm., 60.

The recent treatment of this species by Hartert and Paludan (1936, Mitt. Zool. Mus. Berlin, XXI, p. 212) and Junge (1939, Nova Guinea, [N.S.] III, p. 21) do not correspond with the conclusions reached after the study of the considerable material before me from many parts of New Guinea. There are apparently several immature plumages which remain to be worked out in detail (see Mayr and Rand, 1937, Bull. Amer. Mus. Nat. Hist., LXXIII, Art. I, p. 143, and Junge, 1939, Nova Guinea, [N.S.] III, p. 20). In the adults there is some variation within a series from one locality, so that sometimes individual specimens do not show characters which in series are very pronounced. Geographical variation in size is slight (see also Junge, *ibid.*, p. 21). It is advisable, however, to recognize four races:

cyanocephala Quoy and Gaimard: material from Manokwari and vicinity (4 ♂, 7 ♀) and Kapaur (4 ♂) is characterized in the male by the pale blue color of the top of the head and back, though there is some variation in this, and one male from near Manokwari is darker and is similar to some southeast New Guinea males. Two Triton Bay males also belong here, though they are somewhat darker than the average color of the above birds (wing ♂ 58–62 mm., ♀ 56–59).

bonapartii Gray: a large series of males and females from south of the Snow Mountains and southeast New Guinea and five males from the Aru Islands are characterized in the male by the darker blue crown and back. There is some variation in this, and occasional birds are as pale as the darkest Arfak birds. Two males from Wasiro, one from Makimi (south of Geelvink Bay) and one from the Wangar River (Weyland Mountains) are referable to this race though they show a tendency toward *cyanocephalus*. Hartert and Paludan (*loc. cit.*) identified the Weyland birds as *dohertyi*, but the males of *dohertyi* are as pale as those of *cyanocephalus*.

There are no significant differences in the females within this area, nor do they differ from those of *cyanocephalus* (wing ♂ 57–61 mm., ♀ 53–57).

mysorensis Meyer: two adult males from Biak are indistinguishable from Aru Island birds; one adult female differs from all the

New Guinea birds in the somewhat darker blue crown (wing ♂ 58 mm., 60, ♀ 56).

dohertyi Rothschild and Hartert: a series of males and females from Takar and Hollandia shows that the males are pale blue on the crown and back, indistinguishable from Arfak males, while the females differ in their average slightly darker upperparts.

Todopsis wallacii Gray

Bernhard Camp, 4 km. southwest: 2 ♀ ad.; March 8, 29.

Hollandia: 1 ♂ ad.; July 20.

Found from sea level to 850 meters altitude.

WING.—♂ 51 mm.; ♀ 48, 49.

None of these was in breeding condition.

Clytomyias insignis oorti

Rothschild and Hartert

Lake Habbema, 9 km. southwest: 2 ♂ ad., 2 ♀ ad.; November 1-4.

Bele River Camp: 1 ♀ ad.; November 13.

Found from 2,200 to 2,800 meters altitude.

WING.—♂ 57 mm., 59; ♀ 59, 60, 61.

There is some variation in the paleness of the throat in this series. One male has the back somewhat brownish and compares well with a series from southeast New Guinea. The other male is slightly more greenish on the back. The three females are similar to each other on the upperparts and more grayish green, less brownish than a series from southeast New Guinea and one Mt. Goliath bird. This is a tendency toward the Arfak form, but two specimens from Arfak (1 ♂, 1 ♀) show that *insignis* is much paler below, with a much more whitish throat.

The broad-billed flycatcher is a scarce bird of the shrubbery and low substage.

Acrocephalus arundinaceus australis (Gould)

Bernhard Camp: 5 ♂ ad., 1 ♀ ad.; March 21-April 29.

Found at 50 meters altitude.

WING.—♂ 65 mm., 66, 67, 69; ♀ 62.

The plumage in these birds varies from a somewhat to a considerably worn condition.

They do not appear different from a south New Guinea series.

These birds were found only in the areas of floating grass clumps in deep water, apparently permanent marsh, in the lower end of the lagoon, where they were not very common. They were absent from the dense, tall, wild sugar cane beds along the Idenburg. They sang from the taller grass stems and skulked and apparently fed low in dense grass mats where they were difficult to see and difficult to collect. One male and one female (both March) were in breeding condition; the other males (March and April) all had gonads somewhat enlarged. On March 21 I saw a cup-shaped nest attached to tall grass stems that surely was made by this species.

Megalurus timoriensis macrurus

(Salvadori)

Bele River Camp: 1 ♂, 1 ♂ imm., 1 ♀; November 10-30.

Balim River Camp: 3 ♂, 2 ♂ imm., 4 ♀; December 10-17.

Found from 1,600 to 2,300 meters altitude.

WING.—♂ 67 mm., 69, 69, 72; ♀ 65, 65, 66, 66, 68.

This series agrees fairly well with *macrurus* but differs somewhat from a series from the lowlands of eastern New Guinea in the slightly broader and more extensive streaking of the back. In this respect it recalls the mid-mountain series from about Mafulu (1,200 to 2,000 meters), but the birds are paler and lack the rufous tinge of that population. The lowland race *mayri* is much lighter above; *harterti*, very much darker.

A fairly common bird of the taller, denser grassy areas interspread with shrubbery. Though none of the specimens was in breeding condition, adults were seen carrying food to their young on December 15.

Megalurus timoriensis alpinus

Mayr and Rand

Mt. Wilhelm: 1 ♂; September 19.

Mt. Wilhelm: 7 km. northeast: 1 ♂; September 13.

Mt. Wilhelm: 12 km. northeast: 1 ♂; September 20.

Lake Habbema: 2 ♂, 3 ♀; August 2-8.

Bele River Camp¹: 1 ♂; November 26.

Found from 3,225 to 4,000 meters altitude.

WING.—♂ 74 mm., 76, 78, 78, 79; ♀ 70, 71, 74.

This series differs from a series of *alpinus* from the Wharton Range in averaging slightly darker above, with slightly more extensive dark markings, in the slightly more olive-tinged breast and flanks, and in the average slightly larger size, but there is too much overlap in these characters to use them in separating the two populations.

Mt. Wilhelmina is about a thousand kilometers east of the Wharton Range, the only other known station for this race. As it is a bird of the alpine grassland and as not all of the mountains of the central range of New Guinea rise high enough to have alpine grassland on their summit, its range must be discontinuous.

It was a fairly common bird of the denser areas and clumps of tall grass. None of the specimens was breeding.

Cisticola exilis diminuta Mathews

Balim River Camp: 9 ♂ ad., 1 ♂ imm., 1 ♀ ad., 2 ♀ imm.; December 9-17.

Found at 1,600 meters altitude.

WING.—♂ ad. 47 mm., 47, 47, 47, 47, 48, 48, 49, 50; ♀ ad. 44.

The 1,600-meter birds average slightly larger than south New Guinea (lowland) birds. These birds are in somewhat worn plumage. They differ from birds in comparable plumage from south New Guinea chiefly in the greater extent of black in the feathers of the back. Several males in breeding plumage have a few blackish streaks in the crown.

The fan-tailed warbler was a common species of the open grasslands of the Balim Valley.

Cisticola exilis polionota Mayr

Hollandia: 1 ♀ ad.; July 2.

Found near sea level.

WING.—43 mm.

¹ Brought in by natives, certainly from higher altitudes.

In addition there are three males in fresh breeding plumage from Ifaar in the American Museum. The males compare well with a New Britain male and differ from south and southeast New Guinea birds in comparable plumage in the much paler, more grayish edgings to the back feathers, the paler crown, hind neck and rump and paler underparts.

The north New Guinea birds have hitherto always been referred to *diminuta*.

Sericornis spilodera spilodera (Gray)

Bernhard Camp, 6 km. southwest: 4 ♂; February 15-26.

Bernhard Camp, 4 km. southwest: 8 ♂, 7 ♀; March 9-April 4.

Bernhard Camp: 4 ♂, 1 sex?; April 12-May 3.

Found from 50 to 1,200 meters altitude.

WING.—♂ (10) 58-64 mm. (av. 60.4); ♀ 54, 56, 56, 57, 58, 59.

There is no increase in size with altitude. One specimen differs sharply from others from the same locality in having the underparts completely brownish gray instead of yellowish white.

This was a common bird of the low forest substage. Birds in breeding condition were taken in February (1), March (3), April (1) and May (1).

Sericornis beccarii cyclopus Hartert

Hollandia: 1 ♂; June 22.

Found near sea level.

WING.—59 mm.

This compares well with the type.

Sericornis beccarii idenburgi Rand

Sericornis beccarii idenburgi RAND, 1941, Amer. Mus. Novitates, No. 1102, p. 11—6 km. southwest of Bernhard Camp on the Idenburg River.

Bernhard Camp, 6 km. southwest: 2 ♂, 2 ♀; February 15-March 3.

Bernhard Camp, 4 km. southwest: 3 ♂, 2 ♀, 2 sex?; March 14-April 2.

Found from 850 to 1,200 meters altitude.

WING.—♂ 57 mm., 60, 62, 62, 63; ♀ 58, 59, 60, 60.

This was a bird of the forest undergrowth. It had a fine, sweet, short song. One March male had enlarged testes.

Sericornis nouhuysi nouhuysi van Oort

Mt. Wilhelmina, 7 km. northeast: 2 ♀;
September 21, 22.

Lake Habbema: 2 ♂; August 9.

Lake Habbema, 9 km. southwest: ♂,
♀; October 11–November 8.

Bele River Camp: 4 ♂, ♀, 2 sex?;
November 13–December 1.

Balim River Camp: 2 ♂, 3 sex?; De-
cember 9–13.

Bernhard Camp, 18 km. southwest:
2 ♂, 3 ♀; February 7.

Bernhard Camp, 15 km. southwest: ♂,
♀; January 9–February 1.

Found from 1,500 to 3,600 meters alti-
tude.

WING MEASUREMENTS

	Altitude	Male	Female
	3,600 meters		65 mm.
North slope of of Mt. Wil- helmina	3,225 "	66, 68	
	2,800 "	64–70	62–67
	2,200 "	66–70	63–68
	1,600 "	65	
Idenburg slopes	2,150 "	63–65	60, 60
	1,800 "	62–67	59–60
	1,500 "	61	

This shows a slight correlation between increase in size and increase in altitude. There is also a slight color difference; birds from higher altitudes tend to be slightly paler and more ochraceous; birds from lower altitudes average slightly darker and more brownish, less ochraceous.

However, they do not fall clearly into two series, and I am following my practice of not naming the extremes of series which show progressive altitudinal variation. I have no topotypical material for comparison, but Mt. Goliath and Weyland Mountains birds are very similar to each other and differ from the present series in being somewhat deeper brown above, browner below, and especially in having the forehead and the side of the head considerably richer brown.

Apparently the present series shows a slight tendency toward *stresemanni*.

The gap between the 1,200-meter collecting station where I collected *beccarii* and the 1,500-meter Camp where I collected *nouhuysi* is about nine kilometers. In the

material I collected there was no specimen which did not clearly belong to either one or the other species. So far as my material goes, in this area the species are quite distinct.

Breeding birds were taken in October (2), November (1), December (2), January (1) and February (4).

A nest found November 28 at the Bele River Camp was six feet above the ground, placed among the leaves of a low pandanus growing in the forest. The nest, supported by the pandanus leaves, was a rather bulky, untidy, oval structure with an entrance on the side near the top. Externally it was composed of a thin layer of a coarse, moss-like liverwort, some filmy fern and some half-rotted fiber; this outer layer was much thicker below the nest, forming a foundation; inside that, the lower two-thirds of the nest had a compact shell of partly macerated, dry pandanus leaves; the upper third, one of rootlets; a lining of fine fibers, probably from dead pandanus leaves, and some small feathers covered the lower two-thirds of the cavity. The nest measured outside 130 by 200 mm. deep; inside 55 by 70 deep; with an entrance about 40 mm. across. The nest contained two eggs. They were: shape ovate; shell smooth; gloss medium; color whitish washed with pale purplish brown; markings on one egg are scanty, the other has almost a cap of obscure brownish black markings on the large end, straggling half way down the shell; size 33.5 by 16.1 and 24.0 by 16.0 mm.

The female was shot at the nest.

Sericornis (rufescens) perspicillatus
Salvadori

Lake Habbema, 9 km. northeast: 7 ♂,
♀, 2 sex?; October 13–November 4.

Bele River Camp: ♂, ♀; November
13–30.

Balim River Camp: 1 ♂, 2 ♀; Decem-
ber 11–17.

Bernhard Camp, 15 km. southwest: 9
♂, 2 ♀, sex?; January 12–February 1.

Found from 1,600 to 2,800 meters alti-
tude.

WING MEASUREMENTS			
	Altitude	Male	Female
North slope of Mt. Wil- helmina	2,800 meters	54-58 mm.	52-54
	2,200 "	54-58	52-54
	1,600 "	56	51, 51
Idenburg slope	1,800 "	52-56	50, 51

This shows a slight increase in size with increase in altitude.

There is considerable variation in color in any locality, and birds from various altitudes appear the same. The range of variation appears to be the same in south-east New Guinea birds.

The status of *rufescens* has been frequently questioned, but after an examination of pertinent material it appears unquestionably to be related to *perspicillatus* and not to *papuensis*. The pattern of the head in *papuensis* even suggests a relationship with *Acanthiza*.

Breeding birds were taken in October (1), November (6), December (1) and January (3).

Sericornis papuensis bürgersi Stresemann

Mt. Wilhelmina, 7 km. northeast: 1 ♂; September 21.

Lake Habbema, 9 km. northeast: ♂, ♀; August 24–November 28.

Bele River Camp: ♂, ♀; November 7–25.

Bernhard Camp, 18 km. southwest: ♂, ♀; February 7, 8.

Bernhard Camp, 15 km. southwest: ♂, ♀; January 11.

Found from 1,800 to 3,600 meters altitude.

WING MEASUREMENTS		
Altitude	Male	Female
2,800 meters	59-63 mm.	54-58
2,200 "	60-63	57-59
2,150 "	57-60	
1,800 "	58	

This shows a slight increase in size with increase of altitude, with the greatest break in the series of measurements between the Idenburg slope and the Bele River birds. There is also a slight difference in color; the lower altitude birds average more brownish below and darker above. How-

ever, the greatest change in color is between the 2,200-meter and the 2,800-meter birds, not coinciding with the area in which the greatest change in size occurs.

This series varies considerably in the greenness or brownness of the upperparts; the immature birds are very greenish.

The satisfactory working out of subspecies in this species is hampered by lack of comparative material. I have no *bürgersi* and only two first-year-plumaged examples (including the type) of *meeki*; however, I have the large series from south-east New Guinea collected in 1933 and Stein's series from the Weyland Mountains.

The present series is quite different from the southeast New Guinea birds on the basis of the much more brownish underparts and darker, more brownish upperparts. The Weyland Mountains series (7 ♂) is very uniform compared with the 2,800-meter Mt. Wilhelmina birds. The former birds are only slightly paler on the underparts, but on the upperparts all are somewhat more greenish. The two examples of *meeki* differ from some immature examples in the present series only in being slightly brighter colored on the flanks and the back.

It seems advisable at this time to refer the present series to *bürgersi*; the Weyland Mountains birds cannot be referred to *bürgersi*, but it is possible they are *meeki*; the southeast New Guinea birds are clearly different (*papuensis*).

Breeding birds were taken in October (1) and November (2).

Sericornis arfakianus olivaceus Salvadori

Bernhard Camp, 15 km. southwest: 2 ♀; February 1.

Bernhard Camp, 6 km. southwest: 1 ♂, 1 ♀, 2 sex?; February 16–March 3.

Found from 1,200 to 1,500 meters altitude.

WING.—♂ 52 mm.; ♀ 47, 49, 50.

Acanthiza murina (De Vis)

Mt. Wilhelmina, 7 km. northeast: ♂, ♀; September 1–17.

Lake Habbema: ♂, ♀; August 4–September 3.

Lake Habbema, 9 km. northeast: ♂, ♀; October 14–November 8.

Bele River Camp: ♂; November 22.

Found from 2,800 to 3,600 meters altitude; the Bele River specimen was brought in by natives, probably from higher altitudes.

WING MEASUREMENTS

Altitude	Male	Female
3,600 meters	62 mm., 63, 64, 64	62, 64
3,225 "	60, 60, 61, 62, 62, 64	65
2,800 "	60, 60, 61, 62	59, 59, 60, 61

This shows a slight increase in size with altitude, especially in the female, as is true of southeast New Guinea birds (1937, Bull. Amer. Mus. Nat. Hist., LXXIII, Art. I, p. 130).

This species has been collected only three times previously: by A. Guiliannetti on Mt. Scratchley in the last century (1897, Ibis, [7] III, p. 377), by Archbold and Rand on the Wharton Range in 1933 (1937, Bull. Amer. Mus. Nat. Hist., LXXIII, Art. I, p. 130), by Versteegh in 1913 near Mt. Wilhelmina (1939, Nova Guinea, [N.S.] III, p. 35).

There is considerable variation in the amount of brownish tinge on the upperparts, cheeks, throat and breast, and in the distinctness of the markings on forehead, cheeks and chin.

The females of the present series average slightly darker than the males, which is not true of the southeast New Guinea birds.

Two males in juvenile plumage, one taken in September and one in November, differ from adults in the looser texture of the feathers, the upperparts being duller greenish with blackish tips to many of the feathers and the underparts being more buffy with small brownish black tips to many of the feathers. The markings of forehead, sides of head and chin are about as in adults.

Compared with a series from southeast New Guinea the present series shows no significant differences.

This was a common forest bird; birds in breeding condition were taken in August

and November; in 1933 I took birds in breeding condition in June.

Gerygone cinerea Salvadori

Lake Habbema, 9 km. northeast: 2 ♂, 3 ♀, 1 sex?; October 13–November 3.

Bele River Camp: 2 ♀; November 15, 22.

Found at 2,200 and 2,800 meters altitude.

WING.—♂ 54 mm., 55; ♀ 53–54.

Gerygone chrysogaster chrysogaster

Gray

Bernhard Camp: 13 ♂, 4 ♀; April 12–May 2.

Hollandia: 1 ♂, 1 ♀; June 13, 30.

Found up to 50 meters altitude.

WING.—♂ (10) 53–56 mm. (av. 54.5); ♀ 51, 51, 51, 53, 54.

This series averages about as yellow on the underparts as seven Aru Island birds collected about 1900; on the upperparts they are considerably darker and greener than the Aru Island birds. This difference is probably due to foxing, as some old specimens from Jobi and north New Guinea are indistinguishable from some Aru Island birds.

Seven birds in breeding condition were taken in April.

Gerygone chloronota cinereiceps

(Sharpe)

Bernhard Camp: 1 ♂, 1 ♀; March 12.

Found at 850 meters altitude.

WING.—♂ 50 mm.; ♀ 45.

These two birds appear slightly darker on the back and head when compared with south and southeast New Guinea birds, but the difference is trifling.

Though rare in collections, this species seems to be widely distributed in New Guinea. This appears to be the first record for the species north of the Snow Mountains.

Gerygone palpebrosa wahnesei Meyer

Bernhard Camp, 6 km. southwest: 2 ♂ ad., 4 ♀; February 16–24.

Bernhard Camp, 4 km. southwest: 4 ♂ ad., 1 ♂ imm.; March 12–April 5.

Bernhard Camp: 1 sex?; April 19.

Hollandia: 1 ♀; July 5.

Found from sea level to 1,200 meters altitude.

WING.—♂ ad. 52 mm., 53, 54, 54, 54, 55, 56, 57; ♀ 49, 50, 50, 51, 54.

This series compares well with *Astrolabe* Bay examples.

***Gerygone magnirostris affinis* Meyer**

Bernhard Camp: 5 ♂, 7 ♀, 3 sex?; March 21–May 4.

Found at 50 meters altitude.

WING.—♂ 53 mm., 53, 56, 56, 57; ♀ 52, 53, 53, 53, 54, 54, 54.

I have no comparative material from Jobi.

A common bird of the inundated second growth along the Bernhard Camp lagoon. Breeding birds were taken in April (1) and May (3).

***Gerygone ruficollis insperata* De Vis**

Lake Habbema: 6 ♂, 2 ♀; August 1–25.

Lake Habbema, 9 km. northeast: 1 ♂, 1 ♀; November 6.

Bele River Camp: 1 ♀ imm.; November 12.

Balim River Camp: 9 ♂, 1 ♂ imm., 5 ♀; December 10–17.

Found from 1,600 to 3,225 meters altitude.

WING MEASUREMENTS			
Altitude	Male		Female
3,225 meters	60 mm.,	60, 61, 62,	59, 59
		63, 63	
2,800 "	57		
1,600 "	56, 58, 58, 58, 58,		54, 54
	58, 59		

This shows a slight increase in size with increase in altitude. The higher altitude birds are in considerably worn plumage; those from the lower altitudes are in fairly fresh plumage so they are not strictly comparable. However, the higher altitude birds appear very similar to a series from southeast New Guinea, while the Balim River birds differ slightly in being brighter brownish above, with a slight olive tinge. The tail pattern is similar in all the series, and the slight differences do not warrant separation of subspecies.

This is a rare bird in collections, though

common in certain habitats in New Guinea. This appears to be the first record for the Snow Mountains. It was common in the open forests about Lake Habbema and was especially common in the casuarinas of the Grand Valley, being one of the very few species that was. Birds in breeding condition were taken in August (6) and December (4).

***Eugerygone rubra saturator* Mayr**

Lake Habbema, 9 km. southeast: 4 ♂, 1 ♀; October 21–November 8.

Bele River Camp: 3 ♀; November 9–29.

Bernhard Camp, 15 km. southwest: 1 ♀; January 15.

Found from 1,800 to 2,800 meters altitude.

WING.—♂ 57 mm., 58, 59, 60, 62; ♀ 58, 59, 59, 61.

The red warbler was an uncommon bird, usually found alone, gleaning actively for its small insect food amongst the leaves and twigs of low substage trees and tall undergrowth. Two November females were laying.

***Phylloscopus trivirgatus giulianettii* (Salvadori)**

Bele River Camp: 4 ♂, 2 ♀; November 19–December 1.

Balim River Camp: 5 ♂, 3 ♀; December 9–17.

Bernhard Camp, 15 km. southwest: 1 ♂, 2 ♀; January 15, 28.

Bernhard Camp, 6 km. southwest: 1 ♂; February 19.

Found from 1,200 to 2,200 meters altitude.

WING.—♂ (10) 55–59 mm. (av. 57.6); ♀ 51, 51, 51, 52, 54, 54, 54.

These specimens differ from southeast New Guinea birds only in the average slightly more olive black lateral stripes of the crown and slightly more grayish side of the head. The race *cyclopus* has the lateral stripes of the crown considerably more olive, the upperparts slightly paler and the underparts slightly more vividly colored. The Weyland Mountains race (*albicularis*) and the very similar Arfak race (*poliocephalus*) with the white throat,

gray, not yellow, side of the head and indistinct median crown stripe are more different.

A fairly common bird of the tree tops and substage of the forest and second growth but nesting on the ground in the forest. Two breeding birds were taken in November, and a nest was found in November at the Bele River Camp. The nest was completely concealed within a sloping mossy bank in a forest glade. The entrance was about 40 mm. across and 20 mm. long. Except for a few coarse grass blades in the roof of the nest cavity, it was lined entirely with moss, and it was difficult to tell how much of this had been added after the cavity had been made. The whole interior of the cavity had a smooth surface of moss, and in the bottom was a pad of it about 20 mm. thick. The nest cavity measured about 50 by 45 mm. wide inside, the portion below the entrance being about 25 mm. deep.

It contained two eggs. They were: shape ovate; gloss slight; shell smooth; color white; size 15.9 by 11.6 mm. and 16.8 by 12.1 mm.

Peltops blainvillii (Lesson and Garnot)

Bernhard Camp: 1 ♂, 1 ♀ ad.; April 24, 26.

Taken at 50 meters altitude.

WING.—♂ 103 mm.; ♀ 97.

Peltops montana Stresemann

Lake Habbema, 9 km. northeast: 1 ♂ imm., 1 ♀ ad.; October 6.

Bele River Camp: 1 ♂ ad.; November 22.

Bernhard Camp, 15 km. southwest: 1 ♀ ad.; January 20.

Bernhard Camp, 6 to 8 km. southwest: 5 ♂ ad., 3 ♀ ad.; February 12-28.

Bernhard Camp, 4 km. southwest: 1 ♂ ad., 1 ♀ ad.; March 3, 14.

Found from 850 to 2,800 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
2,800 meters		114 mm.
2,200 "	119	
1,800 "		112
1,600 "	114	
1,200 "	113, 115, 115	110, 111, 111
850 "	113	109

This shows a slight increase in size with increase in altitude, as with birds from southeast New Guinea (1937, Bull. Amer. Mus. Nat. Hist., LXXIII, Art. I, p. 170).

Rhipidura threnothorax Müller

Bernhard Camp, 4 km. southwest: 1 ♀ imm.; March 30.

Bernhard Camp: 3 ♂ ad., 2 ♀ ad.; April 20-27.

Found from 50 to 850 meters altitude.

WING.—♂ ad. 78 mm., 80, 82; ♀ ad. 72, 73.

The three adult males are fairly uniform in having a black chest with rather small white spots in a restricted area and in having the lower breast and abdomen dark gray tinged with olive, with the crissum more blackish brown. The crown is brownish in two birds, more olive in the third; the back varies slightly from brownish olive to olive brown; the rump feathers and upper tail coverts are black, all tipped with the color of the back. A few of the upper primary coverts are white-tipped in one specimen, pale rufous-tinged in another and with hardly a trace of pale tips in a third.

The two adult females differ from each other chiefly in the more brownish abdomen and more olive back of one specimen. They have hardly a trace of spotting in the upper primary coverts. They differ from the male in the more grayish black breast and in being slightly paler above.

The immature female in first year plumage differs from the adult female in having the underparts behind the white throat uniform gray, with a slight olive tinge, the feathers of the breast with white shaft streaks, and in the paler upperparts. There is no spotting in the upper wing coverts.

I have no material from Lobo (type locality), but four Arfak males differ in the larger and more extensive white spots on the breast and the paler upperparts.

However, this species is very variable, and I am withholding a complete discussion of the variability until I finish my field work in New Guinea.

Rhipidura leucothorax leucothorax
Salvadori

Bernhard Camp: 1 ♀; April 10.

Hollandia: 1 sex?; 1938.

Found up to 50 meters altitude.

WING.—♀ 74 mm.; sex? 74.

The Hollandia bird is slightly darker on the back, the worn Bernhard Camp bird slightly paler, than the two Arfak females. None of these has black feathers in the back.

Rhipidura rufidorsa rufidorsa Meyer

Bernhard Camp, 4 km. southwest: 3 ♂; March 11–April 6.

Hollandia: 1 ♀; June 30.

Found from near sea level to 850 meters altitude.

WING.—♂ 65 mm., 66, 67; ♀ 63.

This series compares well with a small series from the Weyland Mountains. For a discussion of this species, see 1938, Amer. Mus. Novitates, No. 991, pp. 8–10.

A March and an April male had enlarged gonads.

Rhipidura brachyrhyncha devisi North

Mt. Wilhelmina, 11 km. northeast: 1 ♀?; August.

Lake Habbema, 9 km. northeast: 8 ♂, 6 ♀; August 24, October 11–November 5.

Bele River Camp: 5 ♂, 1 ♀; November 17–December 2.

Found commonly from 2,200 to 2,800 meters; rarely, to 3,280 meters altitude.

This series exhibits the same dimorphism, a black-tailed and a white-tailed phase, as do the birds from other parts of New Guinea (see Mayr and Rand, 1937, Bull. Amer. Mus. Nat. Hist., LXXIII, Art. I, pp. 164–168).

WING MEASUREMENTS

Male		Female	
black-tailed phase	white-tailed phase	black-tailed phase	white-tailed phase
(9) 70–77 mm. (av. 73)	70, 70, 72	67, 69, 69 70, 70, 71	69

There is considerable variation in the general coloration of each phase, but none of the specimens is intermediate between the two phases.

The series in the black-tailed phase compares well with two males in the same phase from the Weyland Mountains; compared with a series in the same phase from southeast New Guinea, the Snow Mountains birds are slightly more brownish, less grayish below and slightly paler above in both males and females. Males of the white-tailed phase are slightly more brownish below than most southeast New Guinea birds in the same phase but are not paler than the palest; the single white-tailed female shows little difference.

Rhipidura atra atra Salvadori

Bele River Camp: 1 ♂, 1 ♀; November 27.

Balim River Camp: 4 ♂, 4 ♀; December 9–17.

Found at 1,600 and 2,200 meters altitude.

WING.—♂ 74 mm., 74, 74, 78, 78; ♀ 67, 71, 71, 71, 72.

The females are very slightly darker than three Arfak females and are much paler than five Cyclops Mountains females. Hartert and Paludan (1936, Mitt. Zool. Mus. Berlin, XXI, p. 215) have identified Weyland Mountains birds as *vulpes*. A reexamination of the four Weyland Mountains females and two Wondiwoi females shows that while they are slightly darker than Arfak and Bele River and Balim River females, they are not as dark as birds from the Cyclops Mountains and should be included in *atra*. The same is true of two Mt. Goliath females in the American Museum. For a discussion of Huon Peninsula birds, see 1937, Bull. Amer. Mus. Nat. Hist., LXXIII, Art. I, p. 169. Junge (1939, Nova Guinea, [N.S.] III, p. 29) identified birds from south of Mt. Wilhelmina as *atra*. He examined the type specimen of *cinnamomea* Meyer and found it darker but more intensely colored than a series of six Huon Peninsula birds, showing that occasional dark birds occur in the ordinarily pale population of southeast New Guinea.

Rhipidura hyperythra mülleri Meyer

Bernhard Camp, 8 km. southwest: 1 ♂, 1 sex?; February 12.

Bernhard Camp, 6 km. southwest: 3 ♂, 1 ♀, 2 sex?; February 18–March 6.

Bernhard Camp, 4 km. southwest: 4 ♂, 2 ♀, 1 sex?; March 11–31.

Hollandia: 1 ♂; July 13.

Found from near sea level to 1,600 meters altitude.

Wing.—♂ 71 mm., 77, 77, 77, 78, 79, 79, 82; ♀ 69, 71, 72.

Extent of white on outer web of outer tail feathers measured along shaft: ♂ 7 mm., 9, 9, 10, 11, 12, 14, 14; ♀ 9, 10, 13.

Two March males had enlarged gonads.

Rhipidura albolimbata albolimbata
Salvadori

Bele River Camp: 1 ♂, 3 ♀; November 22–30.

Bernhard Camp, 18 km. southwest: 1 ♂, 1 ♀; February 2–7.

Bernhard Camp, 15 km. southwest: 5 ♂, 1 ♀; January 13–26.

WING MEASUREMENTS

Altitude	Male	Female
2,200 meters	85 mm.	76, 78, 79
2,150 "	80	77
1,800 "	81, 82, 82	74

This shows a slight increase in size with increased altitude.

Measurements from various parts of New Guinea are as follows:

	Male	Female
Southeast New Guinea	77–82 mm.	71–78
Cyclops Mountains	81	76, 79 (imm.)
Sepik area	76–80 ¹	74, 77 ¹
Mt. Goliath	78, 81	72, 74, 76
Weyland Mountains	81	
Arfak Mountains	76, 81	
Tamrau Mountains	75, 79 ²	69 (imm.)

Hartert and Paludan (1936, Mitt. Zool. Mus. Berlin, XXI, p. 215) found no significant differences between Arfak, Sepik, Weyland, Cyclops and Saruwaged mountains birds. Mayr and Rand (1937, Bull. Amer. Mus. Nat. Hist., LXXIII, Art. I, p. 160) included southeast New Guinea birds with north New Guinea birds, suggesting on the basis of the characteristics of a single Arfak specimen that Arfak birds

were different. However, Mayr and de Schauensee (1939, Proc. Acad. Nat. Sci. Phila., XCI, p. 127) record no appreciable color difference between two males and one immature female from Tamrau Mountains and southeast New Guinea birds. This indicates that the geographical variation in this species is too slight to recognize races. However, Junge (1939, Nova Guinea, [N.S.] III, p. 30) found that a series from the southern slopes of Mt. Wilhelmiana differed from both Arfak and southeast New Guinea birds in being slightly blacker above, and larger.

A survey of the material in the American Museum and in the Archbold collections indicates that, except in the Snow Mountains above 2,200 meters, the geographical variation is too slight to define subspecies. Birds from the Huon Peninsula and lower altitudes in southeast New Guinea are slightly paler than birds from the Cyclops Mountains, higher altitudes in southeast New Guinea, the Sepik area (1 ♂), Weyland Mountains (2 ♂), Arfak (2 ♂) and the lower Snow Mountains, but in all these populations the differences are so slight and the overlap in characters so great that they should all be considered *albolimbata*.

The material of this species collected in southeast New Guinea in 1933, between 2,000 and 3,680 meters, showed no appreciable variation with altitude, but compared with material from the Rothschild collection collected at the head of the Aroa River, 6,000 feet altitude, a slight increase in size and in darkness of color is evident in the 2,000 to 3,680-meter birds over the 6,000-feet birds, which latter evidently came from the lower edge of the species' altitudinal range.

Wing measurements of southeast New Guinea birds:

Altitude	Male	Female
3,680 meters	81 mm., 82	75, 77
2,800 "	81	75, 77
2,400 "	81	74, 76, 77, 78
2,000 "	82	73, 75, 76
6,000 feet	77, 77, 79	71

The birds from "6,000 ft." are about like Huon Peninsula birds; the birds from higher altitudes are about as dark as birds

¹ Stresemann, 1923, Arch. für Naturgesch., LXXXIX, p. 8.

² Mayr and de Schauensee, 1939, Proc. Acad. Nat. Sci. Phila., XCI, p. 127.

from the lower altitudes in the Snow Mountains.

***Rhipidura albolimbata lorentzi* van Oort**

Mt. Wilhelmina, 9 km. northeast: 1 ♂, 2 ♀; September 7-24.

Lake Habbema: 1 ♂, 4 ♀; August 4-23.

Lake Habbema, 9 km. northeast: 9 ♂, 5 ♀; October 10-26.

WING MEASUREMENTS

Altitude	Male	Female
3,600 meters	95 mm.	81, 83
3,225 "	94	80, 84, 85
2,800 "	82, 82, 85, 86, 88, 88, 89	80, 81, 85

This is a higher altitude representative of *albolimbata*, differing in its large size and darker, more blackish coloration.

In the present Snow Mountains series of this species the change in color is gradual but is most pronounced between 2,200 and 2,800 meters. In the males there is a gradual increase in size between 1,800 and 2,800 meters; then there is a break, with a sudden change to larger size at 3,225 meters. In the females the conspicuous break in the increase in size occurs at a different altitude, between 2,200 and 2,800 meters.

This is the only case I have observed in which the break in the increasing size occurs at different altitudes in the male and in the female. As the most pronounced change in color coincides with the break in size-gradation in the female, I have separated this race at this point.

The type of *lorentzi* was an immature male from the Hellwig Mountains with a wing of 83 mm. (1909, Nova Guinea, IX, p. 85). The altitude of the Hellwig-Kamp in the Hellwig Mountains was 2,549 meters (1937, Nova Guinea, [N.S.] I, p. 185), and the measurements of an additional male and female (wing ♂ 88 mm., ♀ 81) from the Hellwig Mountains (Junge, 1939, Nova Guinea, [N.S.] III, p. 30) indicate that the name *lorentzi* must be applied to the large form.

That the smaller *albolimbata* also occurs on the south slope of the Snow Mountains, below the range of *lorentzi*, is indicated by

two males and three females of *albolimbata* from Mt. Goliath and by the measurements given by Junge (*loc. cit.*).

***Rhipidura rufiventris gularis* Müller**

Bernhard Camp, 6 km. southwest: 4 ♂, 1 ♀; February 13-26.

Bernhard Camp: 1 ♀; April 17.

Hollandia: 6 ♂, 2 ♀; June 22-October 14.

Cyclops Mountains: 2 ♂; March 20, April 2.

Found from near sea level to 1,200 meters altitude.

WING.—♂ (10) 84-91 mm. (av. 87.6); ♀ 80, 81, 82.

There is no increase in size with increase in altitude in this series.

Four males in breeding condition were taken in June.

Rhipidura leucophrys melaleuca

(Quoy and Gaimard)

Hollandia: 1 ♂ imm., 1 ♀ ad., 1 ♀ nestling; June 22-July 11.

Sentani Lake: 1 ♂ ad.; April 20.

Cyclops Mountains: 2 ♂ ad., 1 ♀ ad.,

1 ♀ imm.; March 25-April 21.

Bernhard Camp: 2 ♂ ad., 2 ♂ imm.,

3 ♀ ad.; March 18-April 13.

Found up to 150 meters altitude.

WING.—♂ ad. 102 mm., 102, 103, 103; ♀ ad. 97, 97, 98, 99, 103.

This was a fairly common bird along the edges of the waterways. Breeding birds were taken in March (1) and April (1), and a nest with two eggs was found April 12. It was a typical nest, placed fifteen feet above the water in a dead, isolated tree.

***Monarcha axillaris fallax* (Ramsay)**

Bele River Camp: 1 ♂, 1 ♀; November 29.

Bernhard Camp, 6 km. southwest: 3 ♂; February 19, 22.

Found from 1,200 to 2,200 meters altitude.

WING.—♂ 78 mm., 81, 82; ♀ 72.

These birds compare well with southeastern New Guinea birds and differ from Arak birds in the male sex in the smaller white

pectoral tufts, and in the female sex in the gray underparts, especially the abdomen, though these differences are not great.

One male has a band of white spots on the tips of the feathers across the lower breast.

A rather uncommon bird in this area, frequenting the lower parts of the forest and the undergrowth. It was rather restless and active in its movements, moving from perch to perch and darting out after insects, and with its pose of slightly drooping wings, slightly spread and raised tail and its buzzing, chattering call it recalls a *Rhipidura*.

Monarcha alecto chalybeocephalus
(Garnot)

Cyclops Mountains: 1 ♀ ad.; April 3.

Bernhard Camp: 3 ♂ ad., 5 ♀ ad., 1 ♀ imm.; March 18–April 22.

Found up to 150 meters altitude.

Wing.—♂ ad. 86 mm., 87, 89, 92; ♀ ad. 82, 84, 84, 86, 87.

One April male had enlarged testes.

***Monarcha frater frater* Sclater**

Bernhard Camp, 6 km. southwest: 2 ♂, 1 ♀; February 15–26.

Found only at 1,200 meters altitude.

Wing.—♂ 85 mm., 87; ♀ 84.

I cannot separate these three birds from two males and three females from Arfak. The two Arfak males differ somewhat in intensity of coloration, and the two Bernhard Camp birds agree with the paler of the two others. Rothschild (1931, Nov. Zool., XXXVI, p. 264) has already recorded this race from the Siriwo River, Gebroeders Mountains, saying that the single male he had was slightly paler than Arfak birds. I find it also slightly paler than the present specimens. The race *kunupi* Hartert and Paludan from the next (Wanggar) valley in the Weyland Mountains is quite different, as the description makes clear, and is closer to *periophthalmicus*, which occurs on the south slope of the Snow Mountains (Junge, 1939, Nova Guinea, [N.S.] III, p. 22) and in the Sepik area (Stresemann, 1923, Arch. für Naturgesch., LXXXIX, p. 95).

Monarcha manadensis

(Quoy and Gaimard)

Bernhard Camp: 1 ♂ ad., 2 ♂ imm., 1 ♀ ad., 2 ♀ imm.; March 24–April 29.

Bernhard Camp, 4 km. southwest: 1 ♂ ad., 1 ♀ imm.; March 14.

Found from 50 to 850 meters altitude.

Wing.—♂ ad. 82 mm., 82; ♂ imm. 77, 78; ♀ ad. 80; ♀ imm. 72, 76.

These birds are slightly smaller than south New Guinea specimens, but the difference is trifling.

The first year plumage is attained by an incomplete moult, rectrices, remiges and greater upper wing coverts being retained. There is evidently considerable individual variation in this plumage. The two immature males and females from near Bernhard Camp are similar. They differ from the mature female in the duller back; the forehead more grayish than the crown; the throat and upper breast gray, in one male and one female with some black in the feathers; the white of lower breast and flanks strongly tinged with rufous in the males, less so in the females; the abdomen lightly tinged with the same; the greater upper wing coverts are dull brownish black, instead of glossy black as in the adult. Except for the rufous in the underparts, this corresponds with Ogilvie-Grant's description of a young female (1915, Ibis, Jub. Sup., No. 2, p. 137). However, one immature male from the Fly River has no rufous in the underparts, while an immature female has. An immature male from southeast New Guinea differs even more, but still has the dull upper wing coverts (see 1937, Bull. Amer. Mus. Nat. Hist., LXXIII, Art. I, p. 152).

***Monarcha guttula* (Garnot)**

Bernhard Camp, 4 km. southwest: 1 ♂ ad.; March 15.

Bernhard Camp: 4 ♂ ad., 1 sex? imm.; March 20–April 15.

Hollandia: 2 ♂ imm., 1 ♀ ad., 1 ♀ imm.; June 30–July 25.

Found from near sea level to 850 meters altitude.

Wing.—♂ ad. 78 mm., 79, 80, 83, 85; ♀ ad. 75.

The largest male (wing 85 mm.) is the only specimen from 850 meters, suggesting increase in size with altitude.

Two males with enlarged gonads were taken in March.

Monarcha chrysomela aurantiacus

Meyer

Hollandia: 1 ♂ ad.; October 22.

Bernhard Camp: 2 ♀; March 21, April 23.

Bernhard Camp, 4 km. southwest: 1 ♀; March 15.

Found from near sea level to 850 meters altitude.

WING.—♂ 70 mm.; ♀ 68, 70, 72.

These specimens compare well with a series from the vicinity of Madang.

***Ardes insularis* (A. B. Meyer)**

Bernhard Camp: 5 ♂ ad., 3 ♂ imm., 4 ♀ ad., 1 ♀ imm.; April 11–May 5.

Bernhard Camp, 4 km. southwest: 1 ♂ ad., 1 ♂ imm., 1 ♀; March 14, 18.

Found from 50 to 850 meters altitude.

WING.—♂ ad. 78 mm., 78, 81, 81, 81, 84; ♂ imm. 74, 75, 76; ♀ 73, 76, 76, 76, 79.

This series agrees well with Jobi Island birds.

The three immature males resemble the adult female except for the slightly paler throat and the slightly less brownish back.

Breeding birds were taken in April (2) and May (1), and nests with well-grown young were found on April 22 and May 4. The nests were very similar to those of *A. t. harterti*. The young had a blackish skin and a short, scanty, dusky natal down on crown and nape, on dorsal, humeral, femoral tracts, and on the tips of the secondaries and their coverts, and a very scanty natal down on the breast and abdominal feather tracts.

***Myiagra cyanoleuca* (Vieillot)**

Hollandia: 1 ♂; July 4.

Taken near sea level.

WING.—♂ 86 mm.

This bird is moulting into adult plumage.

This appears to be the first record of this species for north New Guinea.

Machaerirhynchus flaviventer albigula
Mayr and de Schauensee

Hollandia: 2 ♂ ad.; July 17, October 27.

Found near sea level.

WING.—58 mm., 59. TAIL.—44 mm., 45.

These two specimens compare well with Arfak birds in the amount of white in the chin; their size is that of the smallest Arfak birds.

Machaerirhynchus nigripectus saturatus
Rothschild and Hartert

Lake Habbema, 9 km. northeast: 5 ♂, 4 ♀; August 24–October 29.

Bele River Camp: 2 ♂, 2 ♀; November 12–24.

Bernhard Camp, 15 km. southwest: 4 ♂, 3 ♀; January 14–30.

Found from 1,500 to 2,800 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
2,800 meters	64 mm., 64, 67, 68, 68	64, 65, 66, 67
2,200 "	64, 65	65, 66
1,800 "	61, 62, 65	60
1,500 "	61	60

This series of measurements shows a slight increase in size with increase in altitude as with *harterti* (1937, Bull. Amer. Mus. Nat. Hist., LXXIII, Art. I, p. 146). The birds from the lowest altitudes are slightly deeper yellow in color than those from higher altitudes, both males and females; the females from lower altitudes are slightly duller, more grayish on the upperparts.

This race is very distinct in the dark-backed female. In the present series the birds from the higher altitudes have the back and crown dull black, without a brownish tinge, while the male has a glossy black back.

Compared with six females from Mt. Goliath (including the type of *saturatus*) the present series lacks the brownish tinge in the black feathers which is quite pronounced in the Mt. Goliath birds. Possibly this is partly the result of foxing though the original description character-

izes them as blackish brown (1913, Nov. Zool., XX, p. 498). A series of five Weyland Mountains females shows considerable variation in the upperparts. One has the back dull black; the others have a grayish tinge in the back, though not as pronounced as in the Arfak females.

The size difference between the races of this species is not great; this is complicated, too, by altitudinal variation in size.

WING MEASUREMENTS

nigrippectus (Arfak) ♂ 59 mm., 59, 60, 60; ♀ (10) 58-64 (av. 60.4)

saturatus (Mt. Goliath) ♂ 62, 63, 64, 65; ♀ 61, 62, 62, 63, 65 (Also see above.)

hartertii ♂ 60-66; ♀ 60-65

(See 1937, Bull. Amer. Mus. Nat. Hist., LXXIII, Art. I, p. 146, for altitudinal variation.)

Two birds in breeding condition were taken in November.

Microeca griseiceps poliocephala Reichenow

Bernhard Camp, 6 km. southwest: 6 ♂ ad., 2 ♀ ad.; February 24-March 5.

Found only at 1,200 meters altitude.

WING.—♂ 69 mm., 73, 74, 76, 76, 77; ♀ 70.

This series differs from a series of south-east New Guinea birds collected in 1929-1933 (*griseiceps*) in the larger size, the darker crown with less of a greenish tinge, the darker green, less yellowish-tinged back and the paler yellow underparts. A series from Arfak collected in 1928 (*occidentalis*) differs very slightly from the present series in the slightly brownish tinge in the breast, the paler underparts and the duller, more gray-green back. The type of *occidentalis* (Arfak "Warmendi," 1896) is rather different from the more recent series from Arfak (five males and one female collected in 1928) in which there is little variation. The type differs in having the throat distinctly brownish, extending as a distinct wash on the upper breast instead of a faintly brownish tinge; the underparts distinctly deeper yellow; the sides of the head brownish instead of nearly clear gray; the top of the head brownish olive instead of gray with a

slight greenish tinge; the back brighter and more olive green; the remiges and rectrices brownish instead of blackish, and their outer edges more citrine green. This suggests that foxing is very pronounced in this species, and the brownish tinge of the Arfak series may be the result of age. If this is so, the differences between *occidentalis* and *poliocephala* are trivial.

Microeca flavovirescens cuicui (DeVis)

Hollandia: 1 ♂ ad.; October 17.

Found near sea level.

WING.—79 mm.

Microeca papuana A. B. Meyer

Lake Habbema, 9 km. northwest: ♂ ad., 3 ♂ imm., 3 ♀ ad., 1 sex? imm.; August 24-November 6.

Bele River Camp: ♂ ad., 5 ♀ ad.; November 12-30.

Bernhard Camp, 15 to 18 km. southwest: 5 ♂ ad., 5 ♀ ad.; January 10-February 4.

Found from 1,800 to 3,025 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
2,700-3,025 meters	77-81 mm.	76-78
2,200 "	77-79	76-77
450 "	76	76
1,800 "	75-78	74-76

This shows a slight correlation between increase in size and increase in altitude.

The present series is somewhat darker, duller green, less citrine above than material from Arfak, the Weyland Mountains, Huon Peninsula and southeast New Guinea, collected in 1928-1933. Though this difference is fairly pronounced there is the probability that the older material has foxed.

Breeding birds were taken in February (1) and November (2).

Monachella mülleriana mülleriana (Schlegel)

Balim River Camp: 1 ♂ ad., 1 ♂ imm.; December 16.

Bernhard Camp, 10 km. southwest: 1 ♀ ad.; February 26.

Bernhard Camp, 4 km. southwest: 2 ♂ ad.; March 31.

Found from 850 to 1,600 meters altitude.

There is a slight but insignificant variation in the wing length of this species throughout New Guinea. The wing measurements of the available material follow:

	Male ad.	Female ad.	Sex? ad.
Arfak	100 mm., 93, 97	93, 95	
	100, 100		
Triton Bay	100		
Weyland Mountains		92, 97	
Balin River	101		
Bernhard Camp, 4 to 10 km. southwest	101, 101	98	
Madang		95	
Southeast New Guinea	97, 97, 99, 100	91, 93, 94, 95, 96	93, 100, 101
Upper Fly River	94, 95	92	

Otherwise there are no differences.

Petroica bivittata caudata Rand

Petroica bivittata caudata RAND, 1940, Amer. Mus. Novitates, No. 1072, p. 5—9 km. northeast of Lake Habbema.

Lake Habbema: 1 ♂, 1 ♀; August 5, 6.

Lake Habbema, 9 km. northeast: 1 ♂, 1 ♀; October 25, November 5.

Found from 2,800 to 3,225 meters altitude.

WING.—♂ 72 mm., 72; ♀ 70, 71.

Petroica archboldi Rand

Petroica archboldi RAND, 1940, Amer. Mus. Novitates, No. 1072, pp. 5, 6—Mt. Wilhelmina, Snow Mountains.

Mt. Wilhelmina: 9 ♂ ad., 1 ♂ subad., 6 ♀ ad., 1 ♀ subad., 2 ♀ imm., 3 sex?; September 18–29.

Found from 4,000 to 4,300 meters altitude.

WING.—♂ ad. (8) 88–95 mm. (av. 91.9); ♀ ad. 89, 89, 90.

Tregellasia leucops heurni (Hartert)

Bernhard Camp, 8 km. southwest: 1 ♀ ad.; February 12.

Bernhard Camp, 6 km. southwest: 9 ♂ ad., 1 ♂ imm., 3 ♀ ad.; February 15–28.

Bernhard Camp, 4 km. southwest: 5 ♂ ad., 2 ♀ ad.; March 11–April 6.

Found from 850 to 1,600 meters altitude.

WING.—♂ (10) 80–84 mm. (av. 81); ♀ 72, 73, 76, 76, 77.

The characters of this series agree well with those given in the original description. This race is closest to *melanogenys* which occurs in the Cyclops Mountains, the Sepik area and the Huon Peninsula, from which it differs only in lacking the greenish tinge to the crown, nape and hind neck, and in having a white throat. Cyclops Mountains birds have less green in the center of crown and hind neck than typical Huon Peninsula birds. The race which replaces *heurni* to the west (*mayri*, Weyland Mountains and Wandamen Mountains) is more different in having no white ring about the eye, in having the white of the forehead divided by a black line and in having no white throat. The only other races with as much white in the throat are *auricularis* of south New Guinea and *albigularis* of Cape York, which differ in a number of other characters.

This was a common species of the undergrowth and lower substage of the forest. It commonly responds to squeaking and has a scolding, hissing call when excited. Birds in breeding condition were taken in February (3), March (3) and April (2).

Poecilodryas brachyura dumasi

Ogilvie-Grant

Hollandia: 4 ♂, 3 ♀; June 28–October 30.

Found near sea level.

WING.—♂ 83 mm., 85, 86, 86; ♀ 78, 80, 85.

Poecilodryas hypoleuca hermani

Madarász

Hollandia: 1 ♂, 1 ♀; July 18, October 17.

Bernhard Camp: 5 ♂, 2 ♀, 1 sex?; April 10–May 1.

Found up to 50 meters altitude.

WING.—♂ 78 mm., 79, 80, 81, 82; ♀ 72, 73.

The specimens differ from two Arfak males (collected in 1928) and a series from the Fly River (collected in 1936) and south-east New Guinea (collected in 1933) in

being more purely black, less brownish-tinted above and in having on the average a larger white area in the wing. That foxing causes the black feathers to become more brownish is shown by comparing material from southeast New Guinea collected in 1905 and 1933. However, in the above comparison, Hollandia material collected in 1928 was also used and showed the same difference. There is an even greater difference between Takar material collected in 1897 and Arfak and Kapaur material collected in 1896 and 1897, the latter being very much browner.

One female still retains part of the fluffy nestling plumage; this is plain brown on the crown and back, darker brown on chin, breast and flanks and white on the abdomen and under tail coverts. The first year plumage, attained by an incomplete moult, remiges and rectrices being retained, is similar to the adult plumage except for the more rounded shape to the tip of the first primary.

This was a fairly common bird of the lower substage and undergrowth of the depths of the dark, lowland forests. It was usually found singly and has a loud, rather full, two-or-three-note whistled song.

Poecilodryas albonotata griseiventris
(Rothschild and Hartert)

Lake Habbema, 9 km. northeast: 4 ♂ ad., 3 ♀ ad., 1 ♀ imm.; October 12–November 2.

Bele River Camp: 1 ♀ imm.; November 27.

Bernhard Camp, 15 km. southwest: 2 ♂ ad., 1 ♀ ad.; January 15–February 4.

Found from 1,800 to 2,800 meters altitude.

WING.—♂ ad. 105 mm., 111, 111, 112, 112; ♀ 105, 107, 111, 115.

A series from Mt. Goliath, including the type, is dull and apparently somewhat foxed but agrees in general with the present series, as do three birds from the Weyland Mountains. One of the immature specimens still is clad largely in nestling plumage; the other is completing its moult into first year plumage.

This bird differs somewhat from others of the genus in frequenting the higher sub-

stage and the lower tree tops where it sits up rather straight and feeds in true fly-catcher manner.

Poecilodryas sigillata quadrimaculata
van Oort

Mt. Wilhelmina, 7 km. northeast: 3 ♂ ad., ♀ ad.; August 29–October 31.

Lake Habbema: 2 ♂ ad., 1 ♀ ad., 1 sex? ad.; August 18–September 30.

Lake Habbema, 9 km. northeast: ♂ ad., 1 ♂ imm., 4 ♀ ad., 4 ♀ imm.; October 13–November 5.

Bele River Camp: 1 ♀ ad., 2 ♀ imm., 2 sex? ad.; November 9–25.

Collected from 2,200 to 3,600 meters altitude.

WING MEASUREMENTS

Altitude	Male ad.	Female ad.
3,600 meters	102–107 mm.	99–102
3,225 "	106, 107	100
2,800 "	98–103	91–98
2,200 "		92

This shows a slight correlation between increase in size and increase in altitude in both sexes.

This Snow Mountains representative of *P. sigillata* has apparently been taken but twice before, by the Netherlands Snow Mountains Expedition (1910, Notes Leyden Mus., XXXII, p. 213) and by the British expedition to Mt. Carstensz (1915, Ibis, Jub. Sup., p. 113).

I have no comparative material of this race, but from the descriptions these birds are obviously of this form, differing strikingly from its eastern relatives in possessing a white mark on each side of the breast.

There is some variation in this series, in the extent of the white on the inner secondaries. In males the innermost secondary is white; the next one, white with or without a black tip; the next two white, with broader black tips; the next one, white for two-thirds of the basal part of the inner web and black, with or without a white area, in the outer web; and there is a lesser amount of white in the inner web of the next feather. In females the innermost secondary sometimes has a small black tip.

The nestling plumage is very similar to that of *P. s. sigillata* (see 1937, Bull. Amer. Mus. Nat. Hist., LXXIII, Art. I, p. 139) with similar variation, and the moult appears to be the same.

This was a fairly common bird of the dense, closed forest patches of higher altitudes and was common in the savanna forest at 2,800 meters, where it occurred in the same habitat as did *P. cyana*. Breeding birds were taken in August (1), September (1) and October (1).

Peneothello cyana atricapilla

Hartert and Paludan

Lake Habbema, 9 km. northwest: 3 ♂ ad., 1 ♂ imm., 4 ♀ ad., 1 ♀ imm.; October 14–November 2.

Bele River Camp: ♂ ad., 3 ♂ imm., 3 ♀ ad., 2 ♀ imm.; November 12–December 2.

Bernhard Camp, 18 km. southwest: 1 ♂ ad., 1 ♀ ad.; February 8.

Bernhard Camp, 15 km. southwest: ♂ ad., 1 ♂ imm., ♀ ad., 1 ♀ imm.; January 9–February 7.

Found from 1,800 to 2,800 meters altitude.

WING MEASUREMENTS

Altitude	Male ad.	Female ad.
2,800 meters	88 mm., 89, 93	87, 87, 87
2,000 "	91–93	87, 88, 88
2,150 "	92	82
1,800 "	86–91	81–85

This shows a slight correlation between increase in size and increase in altitude in the females.

This series averages slightly paler on the back than a series from the Weyland Mountains but otherwise agrees with it.

Breeding birds were taken in January (1), November (4) and December (1).

Heteromyias albispecularis centralis

Rand

Heteromyias albispecularis centralis RAND, 1940, Amer. Mus. Novitates, No. 1074, p. 4—18 km. southwest Bernhard Camp, Idenburg River.

Bele River Camp: 1 ♂, 1 ♂ nestling, 1 ♀; November 18–23.

Bernhard Camp, 18 km. southwest: 1 sex?; February 5.

Found at 2,150 and 2,200 meters altitude. WING.—♂ 96 mm.; ♀ 91; sex? 95.

This flycatcher was much less common than in the mountains of southeast New Guinea. It was a bird of the forest floor, where it fed on insects. It had a whistled song and a distinctive two-note alarm call. When alarmed it usually flew up to perch six to ten feet above the ground, and it responded readily to squeaking.

***Pachycephalopsis poliosoma balim* Rand**

Pachycephalopsis poliosoma balim RAND, 1940, Amer. Mus. Novitates, No. 1074, p. 4—Balim River.

Bele River Camp: 1 ♂ ad.; November 29.

Balim River Camp: 1 ♂ ad., 1 ♂ imm., 1 ♀ ad.; December 13.

Found at 1,600 and 2,200 meters altitude.

WING.—♂ 107 mm., 110; ♀ 103.

A number of these birds were found in an area of dense, dry forest along the Balim River. It was a shy, retiring bird of the leaf covered forest floor, flying from thicket to thicket and often giving a harsh call when disturbed.

Pachycephalopsis poliosoma idenburgi

Rand

Pachycephalopsis poliosoma idenburgi RAND, 1940, Amer. Mus. Novitates, No. 1074, p. 5—6 km. southwest of Bernhard Camp, Idenburg River.

Bernhard Camp, 6 km. southwest: 5 ♂ ad., 2 ♀ ad.; February 25–March 5.

Found at 1,600 meters altitude.

WING.—♂ 87 mm., 90, 96, 97, 99; ♀ 91, 92.

This is a smaller, darker, more brightly colored, lower altitude representative of the preceding race.

Pachycare flavogrisea subaurantia

Rothschild and Hartert

Bernhard Camp, 6 km. southwest: 6 ♂, 2 ♀; February 13–March 6.

Bernhard Camp, 4 km. southwest: 5 ♂, 2 ♀; March 9–April 4.

Found from 850 to 1,200 meters altitude.

WING.—♂ (10) 66–68 mm. (av. 67.1); ♀ 63, 65, 66, 66.

This series is very much more orange

than a series of *subaurantia*, including the type, and also differs in the brighter gray upperparts, the slightly longer wing and slightly larger bill. However, Hartert has pointed out that this species fades greatly in collections (1930, Nov. Zool., XXXVI, p. 53), and the difference in color between skins collected in 1939 and in 1910 may be due to this. This fading evidently occurs in the first ten years or less of the life of the skin, as there is little difference between Arfak material collected in 1928 and in 1874-1879; nor is there much difference between southeast New Guinea material collected in 1933 and in 1896.

Hartert and Paludan (1936, Mitt. Zool. Mus. Berlin, XXI, p. 202) identified Weyland Mountains birds (collected 1931) as *subaurantia*, saying that they agreed completely with Setekwa River birds collected by Meek in 1910 and were more orange than Arfak material. Comparing this same Weyland Mountains material now (1940) with Arfak material collected in 1928, they agree perfectly, while they now are considerably less orange than the south Snow Mountains series. Thus the Weyland Mountains bird must be considered *flavogrisea*.

Rhagologus leucostigma obscurus Rand

Bernhard Camp, 15 km. southwest: 1 ♀ ad.; January 29.

Taken at 1,500 meters altitude.

WING.—87 mm.

For a review of this species, see 1940, Amer. Mus. Novitates, No. 1072, p. 6.

Pachycephala pectoralis balim Rand

Pachycephala pectoralis balim RAND, 1940, Amer. Mus. Novitates, No. 1072, p. 8—Balim River, Snow Mountains.

Bele River Camp: 6 ♂ ad.; November 12-December 2.

Balim River Camp: 8 ♂ ad., 1 ♂ imm., 8 ♀ ad., 1 ♀ imm.; December 9-19.

Found from 1,600 to 2,400 meters altitude.

MEASUREMENTS

	Wing	Bill
Male	(14) 89-94 mm. (av. 92)	(14) 17-19 (av. 18.1)
Female	(8) 87-92 (av. 89.3)	(8) 17.5-19 (av. 18.2)

The immature male resembles the adult female in general but differs in having the tertials and some upper wing coverts rufous-tinged, apparently remnants of a younger plumage, and in possessing some black feathers in the side of the head, forehead and breast, apparently part of the next plumage. The bird is moulting in these areas, including its remiges, which are almost completely renewed, and instead of being "hen-feathered cock" it appears to be wearing parts of three plumages, the nestling plumage, the first year plumage and the adult plumage. The immature female still retaining the juvenal wing and tail resembles in general the adult female but is generally browner above with the secondaries edged with rusty, as are the greater wing coverts; a few rufous feathers in the upper tail coverts are fluffy and apparently from the previous plumage, the breast band is much more brownish than the adult, and the yellow underparts are duller and tinged brownish; and there is some faint barring in the lower breast.

These birds were fairly common in the forest at 2,400 meters, where *P. schlegelii* was rare, though common higher, and these species seem to replace each other, with a slight overlap.

Birds in breeding condition were taken in November and December.

Pachycephala soror klossi Ogilvie-Grant

Bernhard Camp, 6 km. southwest: 1 ♂ ad., 4 ♀ ad.; March 2-19.

Found at 1,200 meters altitude.

WING.—♂ 89 mm.; ♀ 86, 86, 88, 91.

This series agrees well with a series of Weyland Mountains birds.

Pachycephala schlegelii viridipectus

Hartert and Paludan

Lake Habbema, 15 km. northeast: ♂, ♀; October 9-November 7.

Bele River Camp: ♂; November 18-December 1.

Bernhard Camp, 18 km. southwest: ♂, ♀; January 18-28.

Bernhard Camp, 15 km. southwest: ♂, ♀; February 2-7.

Found from 1,800 to 2,800 meters altitude.

WING MEASUREMENTS		
Altitude	Male	Female
2,800 meters	90-94 mm.	87-91
2,200 "	94	
2,150 "	83-88	83-87
1,800 "	87	82-86

This series has already been recorded (1941, Amer. Mus. Novitates, No. 1102, p. 12).

Birds in breeding condition were taken in January (4), February (2) and November (1).

Pachycephala lorentzi Mayr

Mt. Wilhelmina to 7 km. northeast: ♂ ad., ♀ ad.; September 5-29.

Lake Habbema: ♂ ad., ♀ ad.; August 3-October 6.

Habbema Camp, 9 km. northeast: ♂ ad., ♂ imm., ♀ ad., ♀ imm.; October 11-31.

Bele River Camp: ♀ ad.; November 13-24.

Bernhard Camp, 18 km. southwest: ♂ ad., ♀ ad.; February 5-7.

Bernhard Camp, 15 km. southwest: ♀ ad.; January 9-18.

Found from 2,200 to 3,800 meters altitude on the north slope of Mt. Wilhelmina and from 1,800 to 2,150 meters on the slopes above the Idenburg River.

WING MEASUREMENTS		
Altitude	Male	Female
3,600-3,800 meters	91-95 mm.	88-93
3,225 "	90-94	84-94
2,800 "	86-91	85-89
2,200 "		85, 86
2,150 "	86	83, 83
1,800 "		82

For a discussion of the status of this species, see 1941, Amer. Mus. Novitates, No. 1102, p. 12.

Pachycephala griseiceps jobiensis

A. B. Meyer

Hollandia: 1 ♂ ad., 2 ♂ imm., 2 ♀ ad.; June 30-July 19.

Bernhard Camp: 2 ♀ ad.; April 23, 30.

Bernhard Camp, 4 km. southwest: 4 ♂ ad., 1 ♂ imm., 3 ♀ ad.; March 12-April 5.

Bernhard Camp, 6 km. southwest: 5 ♂ ad., 2 ♀ ad.; February 16-27.

Found from near sea level at Hollandia and from 50 to 1,200 meters altitude on the Idenburg slopes.

WING.—♂ (9) 80-84 mm. (av. 82.8); ♀ (9) 79-82 (av. 79.9).

There is no variation with altitude.

The present series is perhaps slightly greener above than Jobi Island birds, the ear coverts are less brownish, the abdomen and under tail coverts slightly brighter, but these differences are unimportant. One Hollandia bird is very brownish on the back, but this is individual.

It is interesting that *perneglecta* occurs on the Wanggar River (two specimens, Stein Collection) while the very different *jobiensis* occurs on the Siriwo River (one female, Mt. Derimapa, 5,000 feet, Shaw Mayer Collection).

Males with enlarged gonads were taken in March.

Pachycephala hyperythra sepikiana Stresemann

Bernhard Camp: 1 ♂ imm.; May 3.

Bernhard Camp, 4 km. southwest: 7 ♂ ad., 4 ♀ ad.; March 10-April 2.

Bernhard Camp, 6 km. southwest: 1 ♂ ad., 1 ♀ ad.; March 1, 2.

Found commonly at 850 meters, rare at 50 and 1,200 meters altitude.

WING.—♂ (9) 87-93 mm. (av. 89.1); ♀ 85, 86, 87, 87, 89.

There is considerable variation in the color of the back, some specimens are more olive, others more brownish, and there is some variation in the color of the underparts, but the series is well characterized by the bright coloration above and below.

I have but a single poor skin of *sepikiana* from Etappenberg, but the present series agrees with it much better than with the other forms in the bright color of the underparts; *hyperythra* from the Arfak and Weyland Mountains is much duller below, with a smaller white area on the throat, a paler slate crown and paler, colored ear coverts; *reichenowi* is still more different from the present series in the much darker, more brownish back and the duller, darker

ochraceous underparts; *salvadorii* from southeast New Guinea is a pale race, but very dull colored, brownish above and dull ochraceous below.

This was a fairly common bird of the forest undergrowth and low substage.

Pachycephala monacha Gray

Balim River Camp: 1 ♂ ad.; December

9.

Taken at 1,600 meters altitude.

WING.—92 mm.

This is a rather rare species. The material available is not sufficient to decide on geographical variation.

Pachycephala rufinucha niveifrons

Hartert

Bernhard Camp, 15 km. southwest: 1 ♂ ad.; January 30.

Bernhard Camp, 18 km. southwest: 1 ♂ ad.; February 8.

Bele River Camp: 4 ♂ ad., ♀ ad.; November 9–December 3.

Lake Habbema, 9 km. northeast: 2 ♂ ad., 1 ♂ imm., 4 ♀ ad., 2 ♀ imm.; October 16–November 3.

Lake Habbema: 1 ♂ ad.; August 17.

Mt. Wilhelm, 7 km. northeast: 1 ♂ ad., 3 ♀ ad.; August 30–September 23.

Found from 1,500 to 3,600 meters, most common between 2,200 and 2,800 meters altitude.

There is some variation in size with altitude as the following wing measurements show:

Altitude	Male	Female
1,500 meters	87 mm.	
2,150 "	90	
2,200 "	90–94	88–94
2,800 "	93–97	90–93
3,225 "	96	
3,600 "	94	94, 96, 104

A similar variation occurs in *gamblei* in southeast New Guinea (1937, Bull. Amer. Mus. Nat. Hist., LXXIII, Art. I, p. 177).

There is also some slight variation in color correlated with altitude, the birds from lower altitudes tending to be slightly darker green on the back and flanks.

The present series compares well with a series from the Weyland Mountains,

though slightly more grayish green on the flanks. Three specimens from Wondiwoi, including the type of *niveifrons*, are slightly more olive, less clear greenish on the upperparts and on the flanks.

This thickhead differs in habits from most of the New Guinea members of the genus in being a shy, retiring bird of the undergrowth, rarely venturing up into the substage. Its food is usually insects, but one specimen had its stomach filled with fruit.

Pachycephala tenebrosa atra Rothschild

Bernhard Camp, 15 to 18 km. southwest: 3 ♂, 1 ♀; January 14–February 8.

Found from 1,500 to 2,150 meters altitude.

WING.—♂ 90 mm., ♀ 94, 95.

Iris dark brown, bill black, feet blackish. These birds are slightly darker than the type of *atra* on the upperparts; on the underparts one male is similar to the type, while two males are darker, more blackish brown. Comparing the series of five of the birds collected by Stein in the Weyland Mountains (Menoo River) four are more brownish on the upperparts, closer to *tenebrosa*, though one is very similar to the type of *atra*. They should be called *tenebrosa*, though slightly intermediate.

This seems to give the distribution of races on the Snow Mountains as: *tenebrosa* from Mt. Goliath along the south slope to the valley of the upper Wanggar River in the Weyland Mountains, and *atra* from the valley of the upper Siriwo River, Gebroeder Mountains, along the north slope to the country above the Idenburg River. It is interesting that *Pachycephala griseiceps* has a similar distribution in this area, *jobiensis* occurring on the Siriwo River, *perneglecta* on the Wanggar River.

The identity of the birds from the Schraderberg should be interesting. According to Hartert and Paludan they are more brownish than Weyland Mountains birds.

The stomach contents of three birds consisted of insect remains.

This scarce bird was found low in the shrubbery in the forest.

Myiolestes megarhynchus maeandrinus
(Stresemann)

Lake Habbema, 9 km. northeast: 1 ♂ ad.; October 27.

Bele River Camp: 1 ♂ ad.; 1 ♀ ad.; 1 ♀ imm.; November 22–December 2.

Taken at 2,200 meters; the specimen brought in by natives at 2,800 meters probably came from a lower altitude.

WING.—♂ 95 mm., 102; ♀ 92, 95.

The males have a black bill, the females a brownish black bill.

The two males are somewhat more greenish above, with crown somewhat grayer, than three males from Maeandenberg, but they agree fairly well on the underparts. Two females from Meandenberg differ greatly from each other. One is as dark as the darkest of a series of *tappenbecki* on the underparts, with a brownish back; the other is much paler on the underparts, with a much paler, more olive back. The adult female from the Bele River agrees fairly well on the upperparts with the paler bird and is slightly darker below.

Myiolestes megarhynchus idenburgi
Rand

Myiolestes megarhynchus idenburgi RAND, 1940, Amer. Mus. Novitates, No. 1072, p. 9—4 km. southwest of Bernhard Camp, Idenburg River.

Bernhard Camp, 4 km. southwest: 6 ♂ ad., 1 ♂ imm., 3 ♀ ad.; March 8–30.

Bernhard Camp, 6 km. southwest: 2 ♂ ad.; February 15, 16.

Found at 850 and 1,200 meters altitude.

WING.—♂ ad. 93 mm., 95, 97, 98, 99, 101, 102; ♀ ad. 92, 92, 94.

Three birds in breeding condition were taken in March.

Myiolestes megarhynchus hybridus
(Meise)

Hollandia: 2 ♂, 2 ♀; June 16–22.

Taken near sea level.

WING.—♂ 95 mm., 98; ♀ 91, 94.

Despite Hartert's doubts (1930, Nov. Zool., XXXVI, p. 58) this is a recognizable race, as Stresemann and Paludan (1932, Nov. Zool., XXXVIII, p. 226) have pointed out.

Pitohui kirhocephalus meyeri
Rothschild and Hartert

Hollandia: ♂, ♀; June 16–November 4.

Cyclops Mountains: sex?; March 29–April 4.

Bernhard Camp: ♂, ♀; March 21–April 5.

Bernhard Camp, 4 km. southwest: ♂, ♀; March 8–April 6.

Found near sea level at Hollandia, at 50 meters altitude at Bernhard Camp, and at 850 meters above Bernhard Camp.

WING MEASUREMENTS

Altitude	Male	Female
Near sea level	107–113 mm.	104–107
50 meters	107 (once) 111–116	106–115
850 "	112	105–115

In addition to the above Hollandia birds I have two males and a female collected by Mayr in 1928. Seven of the nine Hollandia males are rufous below, varying somewhat, with a brown throat not sharply marked off from the breast. The other two males differ sharply from the rest of the series in being much paler, more fulvous below with a grayish brown throat, in one bird with some of the feathers tipped with dull chestnut, and in that bird the color of the throat is sharply marked off from the breast; on the upperparts one bird is much duller, less rufous, the other is much duller and darker, with less rufous. On the underparts these birds recall the race *brunneicauda* known from further east, but the upperparts are quite different, lacking the dark chestnut back and gray crown. They suggest a hybridization with some different population to the east. There is considerable variation in the intensity of the general coloration of the females, and in these too the palest birds have the differently colored throat most pronounced, but with the females there is a complete series of variation, and the extremes are not as pronounced as in the males. In this series the females are slightly paler than the males.

In a large series from Ifaar and the Cyclops (Mayr Collection), including the type of *proteus*, there is considerable variation, and some birds are quite pale but

not so strikingly different as the one Hollandia male.

For comparison from Takar I have three birds, including the type of *meyeri* (wing ♂ 109, ♀ 111, 112) which show little variation, and two birds from Tana Mera (wing ♀ 107, sex? 112) which are slightly paler. These birds fall within the range of variation of the series from Ifaar so that *proteus* cannot be maintained.

The series from Bernhard Camp, 50 meters altitude, averages slightly darker than Ifaar birds, and none is so pale as some Ifaar birds, but the difference is trifling. In this series the females average slightly darker than the males, but one female from Ifaar is almost as dark as the darkest Bernhard Camp female.

The series from 850 meters is not larger than the 50 meters altitude series but is definitely paler, more yellowish below and paler above. They might be separable except that some specimens approach in color some from 50 meters, and most of the series can be matched fairly well by some of the pale birds from Ifaar. Thus under the name *meyeri* I am including several slightly differing populations.

To the west this species is represented in the Weyland Mountains by the closely related *brunneivertex* Rothschild which is similarly colored but much brighter rufous, and on Jobi Island by *jobiensis* which is more uniformly colored and darker as well as more vividly colored. To the east are the more different races *brunneicaudus* from the lower Sepik and Astrolabe Bay, and *senez* from the upper Sepik.

The food of this species consists of both insects and fruit. Birds in breeding condition were taken in March (4), April (2) and October (1).

Pitohui dichrous (Bonaparte)

Bernhard Camp, 10 km. southwest: 7 ♂; February 21.

Bernhard Camp, 6 km. southwest: 6 ♂, 7 ♀; February 13-March 8.

Bernhard Camp, 4 km. southwest: ♂, 4 ♀; March 13-April 4.

Found from 850 to 1,500 meters altitude.

WING.—♂ (10) 99-111 mm. (av. 104.5), ♀ (9) 101-107 (av. 104).

Hollandia: 4 ♂, 5 ♀; June 24-October 22.

Cyclops Mountains: 1 ♂, 3 ♀; December 10-April 12.

Found near sea level.

WING.—♂ 101 mm., 105, 106, 108; ♀ 97, 100, 101, 102, 103, 105, 106, 107.

In this species there is some individual variation in the general color of the upper and underparts, but with series from various localities to compare it is evident that there is considerable variation with locality. Variation does not progress regularly, representing a continuous geographical series, but gives discontinuous distribution with isolated populations more like each other than they are like those occupying intermediate positions. Though the extremes in color are fairly distinct, many of the populations intermediate in character are separated with difficulty from each other.

Southeast New Guinea is occupied by the palest birds, of which I have material from as far west as the Hall Sound area. Birds from the north coast or southeast New Guinea are slightly darker; the Hertzog Mountains birds are similar though somewhat darker (1931, Mayr, Mitt. Zool. Mus. Berlin, XVII, p. 717). Continuing westward on the central range, Junge (1939, Nova Guinea, [N.S.] III, p. 44) considers birds from the south of Mt. Wilhelmina to be the same as those from southeast New Guinea, and Ogilvie-Grant (1915, Ibis, Jub. Sup., No. 2, p. 100) found birds from the south of the western Snow Mountains to be indistinguishable from southeast New Guinea birds. On the north of the central range, Hartert and Paludan (1936, Mitt. Zool. Mus. Berlin, XXI, p. 208) record Sepik area birds as like Weyland Mountains and Huon Peninsula birds, i.e., somewhat darker than southeast New Guinea birds. Farther west, on the slopes above the Idenburg, the series from the present expedition is slightly darker than birds from southeast New Guinea. From the western end of the Snow Mountains, in the Weyland Mountains, the series available is slightly darker than Idenburg River birds and

somewhat darker than southeast birds. Birds from Arfak are perhaps slightly darker than Weyland Mountains birds. This gives us a series on the central range and Arfak Mountains of New Guinea grading from pale in the southeast to darker in the west, with populations intermediate in character between the two extremes. But beside the populations along the main range of New Guinea, we get outlying populations which do not fit into this series. On the south I have a series from the middle Fly River (Sturt Island) which are somewhat darker than Arfak birds. On the north the Huon Peninsula series is nearly as dark as Arfak birds, the Astrolabe birds are slightly darker and very similar to Arfak birds, the Humboldt Bay slightly darker again and indistinguishable from middle Fly River birds, while Jobi Island birds are slightly darker than Humboldt Bay birds and are thus the darkest of all.

There are two names available for geographical races in this species; *dichrous* for the darker birds from Arfak and *monticola* for the palest birds from southeast New Guinea.

It might be advisable to give the darkest bird from Jobi a new name and include Humboldt Bay and middle Fly River birds with them, use the name *monticola* for southeast New Guinea birds and those from the south slopes of the Snow Mountains, and use the name *dichrous* for the Arfak Mountains, western end (Weyland Mountains) and northern slopes of the Snow Mountains, Huon Peninsula and Astrolabe Bay birds. However, to call several separated populations in each of the three groups by the same name would imply a closer relationship than probably actually exists. I think it advisable to point out the variation under the specific name and use no subspecific names in this species. Mayr in his treatment of the irregularly variable New Guinea species *Podargus papuensis* (1937, Amer. Mus. Novitates, No. 939, p. 8), *Cacatua galerita* and *Psittichas fulgidus* (1937, Amer. Mus. Novitates, No. 947, pp. 6, 9) handled similar problems in a similar way.

One February male had enlarged testes.

Pitohui ferrugineus heurni Hartert

Hollandia: 2 ♂ ad., 1 ♂ imm., 1 ♀ ad.; June 16–July 11.

Bernhard Camp; 3 ♂ ad., 2 ♂ imm., 4 ♀ ad., 1 ♀ imm.; April 23–30.

Taken up to 50 meters altitude.

WING.—♂ ad. 135 mm., 138, 141, 143, 145; ♀ ad. 136, 136, 137, 138, 140.

The *Hollandia* specimens are slightly paler than those from the Idenburg River, which come from about 60 kilometers east of the type locality of *heurni*; specimens from Humboldt Bay area, Weyland Mountains area and Snow Mountains (southern slope of the western Snow Mountains) are slightly paler but still compare well with this series. The Arfak area is inhabited by a somewhat paler population. Junge (1939, Nova Guinea, [N.S.] III, p. 43) examined the type of *ferrugineus* (from Lobo Bay) and found it identical with Arfak birds which must bear that name. In east New Guinea there is a much paler representative form *clarus*; specimens from the lower Fly River and from the Huon Peninsula are still typical *clarus*. However, on the upper Fly River the birds are intermediate between *heurni* and *clarus*; that is, they are indistinguishable from *ferrugineus* and must bear that name. Junge (*loc. cit.*) refers birds from south of Mt. Wilhelmina also to *ferrugineus*. Probably there is a similar population indistinguishable from *ferrugineus* in the Sepik area.

To summarize: there is a dark central population *heurni*, which changes to a somewhat paler population westward, *ferrugineus*, and to the eastward it changes to a somewhat paler population indistinguishable from *ferrugineus* (on the upper Fly River at least) and then to a much paler form *clarus* from the lower Fly River and Huon Peninsula eastwards.

The Jobi Island race *holerythrus* differs from *heurni* in the deeper, more vivid coloration above and below.

One April male had enlarged gonads.

Pitohui cristatus arthuri Hartert

Bernhard Camp: 1 ♂; March 27.

Bernhard Camp, 4 km. southwest: 1 ♂; 2 ♀; March 12–17.

Bernhard Camp, 6 km. southwest: 1 ♂; February 18–March 3.

Found from 50 to 1,200 meters altitude.

WING.—♂ 120 mm., 122, 123; ♀ 112, 113, 118, 118.

Hartert and Paludan have pointed out that the Sepik area birds are apparently intermediate between *cristatus* and *arthuri*. The present series is much more olive brown, less rufous above than *cristatus*, and somewhat darker above than *arthuri* on the average, but as individuals of this series approach certain individuals of each race, I prefer to list this series under *arthuri* to which they are closest.

The distribution of this race is curious; south New Guinea birds are identical with Cyclops Mountains birds, and birds from the Sepik and Idenburg rivers are *arthuri* with a slight tendency toward *cristatus*. However, two birds from the south slope of Mount Goliath are very rufous above, clearly *cristatus*.

This species spends much of its time on the ground, where it feeds on insects.

Pithui nigrescens subspecies?

Bernhard Camp, 15 km. southwest: 2 ♂ ad.; January 29–February 2.

Taken at 1,500 and 2,150 meters altitude.

WING.—134 mm., 135.

These two males are dark and compare fairly well with Weyland Mountains males (*meeki*), but the males of *bürgersi* from the Sepik area, of which I have no material, are also dark, according to the description.

Eulacestoma nigropectus clara

Stresemann and Paludan

Bele River Camp: 1 ♀ imm.; November 20.

Taken at 2,200 meters altitude.

WING.—69 mm.

This specimen agrees with a Weyland Mountains and a Mount Goliath immature female and differs from southeast New Guinea immature females in the more distinct barring on the breast. The adult males from the Weyland Mountains and southeast New Guinea are very similar.

In the southeast New Guinea mountains this was a common bird, gleaning for its in-

sect food through the undergrowth and low substage, favoring especially the bamboo thickets. It moved about singly or in small parties up to three or four in number, and in behavior recalled *Sericornis nouhuysi*. In the Snow Mountains only the one specimen was seen.

Artamus leucorhynchus leucopygialis

Gould

Bernhard Camp: 3 ♂ ad., 3 ♀ ad., 1 ♀ imm.; April 10–May 3.

Cyclops Mountains: 5 sex? ad., 1 sex? imm.; March 23–April 20.

Hollandia: 2 ♂ ad.; July 7, 9.

Found up to 50 meters altitude.

WING.—♂ ad. 126 mm., 130, 130, 132, 135; ♀ ad. 125, 127, 130.

None had enlarged gonads.

A fairly common bird about the second growth along the lagoons and the exposed dead trees on the river margin near Bernhard Camp.

Artamus maximus Meyer

Lake Habbema: 2 ♂ ad., 1 ♀ ad.; August 3–27.

Bele River Camp: 2 ♂ ad.; November 22.

Balim River Camp: 5 ♂ ad., 2 ♂ imm., 2 ♀ imm.; December 9–15.

Bernhard Camp, 15 to 18 km. southwest: 1 ♂ ad., 2 ♀ ad.; January 16, February 4.

Found from 1,600 to 3,400 meters altitude.

WING.—♂ ad. (9) 158–168 mm. (av. 164.5); ♀ ad. 160, 165, 168.

This series shows no increases in wing length with increase in altitude.

One August male had enlarged gonads; the four immature birds taken in December are in nestling plumage, with the remiges not yet completely free of their sheaths.

An uncommon bird of the forest edges and clearings, usually found in small parties. In habits it is much like *A. leucorhynchus*, but it soars much more.

Aplonis cantoroides (Gray)

Bernhard Camp: 1 ♂ ad., 1 ♂ imm.; April 10, May 3.

Sentani Lake: 1 sex?; April 20.

Found near sea level.

WING.—♂ ad. 101 mm., ♂ imm. 97.

This glossy starling was an uncommon bird, usually seen in pairs, along the Idenburg lagoons. One April female was in breeding condition.

Aplonis metallica metallica (Temminck)

Lake Habbema: 1 ♀ ad.; August 2.

Bernhard Camp: ♂ ad., ♀ ad., 2 ♀ imm.; March 19–May 4.

Hollandia: 1 ♀ ad.; March 19.

Cyclops Mountains: 8 sex? imm.; March 29–April 8.

Found up to 50 meters altitude; one, at 3,225 meters.

WING.—♂ ad. 105 mm., 109, 109, 109, 110, 110, 111; ♀ ad. (10) 104–109 (av. 105.9).

The bird from Lake Habbema was found dead, singly, floating in the lake. It had been dead several days; the stomach was empty, but the bird was fat. This is strictly a lowland bird, and its occurrence here is probably accidental.

At Bernhard Camp it was a common bird, large flocks feeding in fruiting trees along the lagoon and perching on dead exposed trees.

Melanopyrrhus anais orientalis

(Schlegel)

Bernhard Camp: 5 ♂ ad., 5 ♀ ad., 1 ♀ imm.; April 19–May 4.

Found at 50 meters altitude.

WING.—♂ ad. 144 mm., 144, 152, 152, 158; ♀ ad. 147, 148, 149, 149.

All these specimens have the black patch on the back of the crown; only one adult has some yellow in the black of the side of the head and chin.

Mino dumontii dumontii Lesson

Bernhard Camp, 4 km. southwest: 3 ♂, 2 ♀; March 8–April 5.

Bernhard Camp: 5 ♂, 8 ♀; March 19–April 30.

Cyclops Mountains: sex?; April 6–November 5.

Hollandia: 2 ♂, 4 ♀; June 23–November 28.

Found up to 850 meters altitude.

WING.—♂ (10) 148–161 mm. (av. 155.6); ♀ (10) 143–158 (av. 151.3).

I am delaying an opinion on the validity of *violaceus* Berlepsch until the completion of the New Guinea exploration.

This was a fairly common bird of the tree tops of the forest, where it was usually found in small parties. It fed on the fruit of forest trees and often perched on dead trees projecting above the forest. It is somewhat noisy, uttering harsh cries. One July female was in breeding condition.

Oriolus szalayi (Madarász)

Bernhard Camp: 4 ♂, 6 ♀; March 19–May 3.

Hollandia: 1 ♀, 1 sex?; June 29.

Found up to 50 meters altitude.

WING.—♂ 137 mm., 141, 143; ♀ 134, 138, 140, 140, 140, 141.

This oriole was not uncommon in the forest fringing the Idenburg lagoons and in the taller second growth. One April male had enlarged testes.

Pomareopsis bruijni (Salvadori)

Bernhard Camp, 4 km. southwest: 1 ♂; March 10.

Bernhard Camp, 6 km. southwest: 2 ♂, 3 ♀; February 20–March 4.

Bernhard Camp, 15 km. southwest: 1 ♂, 1 ♀; January 30, February 19.

Lake Habbema, 9 km. northeast: 1 ♂; November 1.

Found from 850 to 2,800 meters altitude.

WING.—♂ 104 mm., 104, 105, 108, 110; ♀ 102, 103, 103, 105.

This is a bird of the rapid mountain streams, even where they are completely shaded by the enclosing forest, and found nowhere else. It is found singly or in pairs along the water margins, but I have never seen it enter the water.

Cracticus cassicus cassicus (Boddaert)

Bernhard Camp: 1 ♂ ad., 3 ♀ ad.; March 18, April 12.

Hollandia: 3 ♂ ad., 2 ♀ ad.; July 5–October 20.

Cyclops Mountains: 6 sex? ad., 2 sex? imm.; November 29–December 29.

Found up to 50 meters altitude.

WING.—♂ 171 mm., 172, 173; ♀ 170, 173, 173, 180.

These birds are larger and have an average of more white in the upperparts than south New Guinea birds. However, individual variation is great in this species, and I am deferring a review of it until the field work is finished in New Guinea.

The butcher bird was a common bird of the lowland forest and especially of the trees fringing the waterways. Its loud, melodious song, often pumped out with fluttering wings, is one of the common bird calls. In pairs or small parties it moves slowly about the tops of the trees, gleaning its insect prey from the branches. Breeding birds were taken in March (1) and April (1), and a nest was seen in construction about sixty feet up in one of the big trees fringing the waterways at Bernhard Camp.

Cracticus quoyi quoyi (Lesson)

Bernhard Camp: 1 ♂, 1 ♀; March 23, May 5.

Hollandia: 1 ♀; July 12.

Found up to 50 meters altitude.

WING.—♂ 180 mm.; ♀ 177.

Dicurus carbonarius carbonarius Bonaparte

Hollandia: 2 ♂ ad., 3 ♀ ad.; June 23–July 27.

Bernhard Camp: 10 ♂ ad., 1 ♂ imm., 6 ♀ ad.; March 21–May 2.

Cyclops Mountains and Ifaar: sex? ad.; 1 sex? imm.; March 29–November 5.

Found up to 50 meters altitude.

WING.—♂ ad. (10) 143–159 mm. (av. 153.6); ♀ ad. (9) 145–155 (av. 149.3).

Chaetorhynchus papuensis Meyer

Bernhard Camp, 6 km. southwest: 1 ♂, 4 ♀; February 13–March 4.

Found at 1,200 meters altitude.

WING.—♂ 119 mm.; ♀ 108, 111, 111, 115.

Corvus macrorhynchus orru Bonaparte

Hollandia: 1 ♂ imm., 2 ♀ ad.; July 2–12.

Found near sea level.

WING.—♂ 336 mm.; ♀ 320, 321.

These specimens compare well in purplish gloss with three specimens from Dorey (wing ♂ 314; ♀ 319; sex? 333).

Crows were seen only at Hollandia where, singly or in pairs, a few frequented the sea beach to feed and roosted in the mangroves.

Gymnocorvus tristis (Lesson and Garnot)

Bernhard Camp, 6 km. southwest: 1 ♀ ad.; February 17.

Bernhard Camp, 4 km. southwest: 1 ♂ ad., 1 ♀ ad.; April 2, 6.

Bernhard Camp: 2 ♂ ad., 2 ♀ ad., 1 sex? ad.; March 20–April 27.

Cyclops Mountains: 2 sex? ad., 1 sex? imm.; October 13–December 10.

Hollandia: 5 ♂ ad., 1 ♂ imm., 2 ♀ ad., 1 sex? imm.; June 30–October 18.

Found from sea level to 1,200 meters altitude.

WING.—♂ ad. 304 mm., 305, 305, 312, 314, 320, 322, 340; ♀ ad. 308, 312, 321, 323, 335, 344.

Two adult females and one adult male are in the dark phase. One adult female has a brownish black, intermediate type of plumage; the others are in the pale brownish and white phase. All three immatures are in the pale phase.

Manucodia ater ater (Lesson)

Bernhard Camp: 1 ♂, 3 ♀; March 24–April 26.

Hollandia: 1 ♂; July 12.

Found up to 50 meters altitude.

WING.—♂ 174 mm., 175; ♀ 158, 161, 177.

The smaller size which Junge (1939, Nova Guinea, [N.S.] III, p. 91) points out for north New Guinea birds is not significant.

Manucodia jobiensis Salvadori

Bernhard Camp: 2 ♂ ad., 1 ♀ ad.; March 21–April 4.

Found up to 50 meters altitude.

WING.—♂ 173 mm., 174; ♀ 175.

Rothschild (1932, Nov. Zool., XXXVII, p. 217) says that *rubiensis* Meyer should be

used for the New Guinea birds. The only difference between the populations seems to be one of size, and this seems too small to use in separating them.

***Manucodia chalybatus* (Pennant)**

Bernhard Camp, 6 km. southwest: 1 ♂ ad., 3 ♂ imm., 3 ♀ ad., 1 ♀ imm.; February 12–March 5.

Bernhard Camp, 4 km. southwest: 3 ♂ ad., 2 ♀ ad., 1 ♀ imm.; March 13–April 6.

Bernhard Camp: 1 ♀ ad., 1 ♀ imm.; April 21, 25.

Hollandia: 3 ♂ ad., 3 ♂ imm., 2 ♀ ad., 1 ♀ imm.; June 24–July 25.

Found from sea level to 1,200 meters altitude.

WING.—♂ ad. 169 mm., 173, 173, 173, 175, 179, 184; ♀ ad. 160, 163, 164, 168, 168, 168, 171, 172.

***Macgregoria pulchra carolinae* Junge**

Mt. Wilhelmina, 1 to 7 km. northeast: ♂, ♀; August 28–September 16.

Lake Habbema: ♂, ♀; August 3–25.

Found from 3,225 to 3,900 meters altitude.

WING.—♂ 188 mm., 189, 190, 197, 200; ♀ 162, 167, 171, 171, 175, 176, 179.

Junge (1939, Nova Guinea, [N.S.] III, p. 82) described this form when he recorded the species for the first time from the Snow Mountains. Previously it was known only from the mountains of southeast New Guinea. For its habits, nest, eggs and young, see 1940, Amer. Mus. Novitates, No. 1073, pp. 1–7.

Paradigalla brevicauda

Rothschild and Hartert

Bele River Camp: 1 ♀; November 20.

Bernhard Camp, 15 km. southwest: 2 ♂ ad., 6 ♀; January 11–28.

Found at 2,200 meters on the Bele River, and from 1,600 to 1,800 meters on the Idenburg slopes.

WING.—♂ 157 mm., 160; ♀ (1,600–1,800 meters altitude) 149, 151, 151, 153, 153; ♀ (2,200 meters altitude) 161.

The wattled bird of paradise was an uncommon bird, usually found sitting rather

inactive in the lower substage. One stomach contained fruit; another, fruit, insects and a small frog.

***Epimachus meyeri albicans* (van Oort)**

Lake Habbema, 9 km. northeast: 1 ♀; October 29.

Bele River: 1 ♂ ad., 9 ♂ imm., 6 ♀ imm.; November 11–December 3.

Bernhard Camp, 18 km. southwest: 3 ♀; February 2–7.

Found from 2,200 to 2,700 meters altitude on the north slope of Mt. Wilhelmina, and at 2,150 meters on the Idenburg slope.

WING.—♂ ad. 176 mm.; ♂ imm. 157, 160, 164, 166, 167, 168, 168, 168, 171; ♀ 146, 150, 151, 152, 152, 153, 155, 155, 155, 156.

These are assigned to this race on geographical grounds.

***Astrapia splendidissima helios* Mayr**

Lake Habbema: 1 ♂ imm., 1 ♀; August 5, October 3.

Lake Habbema, 9 km. northeast: ♂ ad., ♂ imm., 1 ♀; October 17–November 2.

Bele River Camp: 4 ♂ ad., ♂ imm., ♀; November 7–December 3.

Bernhard Camp, 15 to 18 km. southwest: ♂ imm., ♀; January 13–February 8.

Common from 2,200 to 2,800 meters altitude, uncommon at 3,225 meters, and one seen at 3,400 meters altitude; uncommon from 1,800 to 2,150 meters altitude on the Idenburg slopes.

WING.—♂ ad. 136 mm., 138, 138, 139, 141, 142; ♀ (10) 129–137 (av. 134.6).

There is no increase in size with increase in altitude.

The adult males compare well with the type of *helios*, with a slight tendency toward *splendidissima*. The females and immature males differ from six Mt. Goliath birds (collected in 1911) in being more blackish on the upperparts. In this character they are similar to Weyland Mountains skins collected in 1930. However, skins collected in the Weyland Mountains in 1920 and earlier are browner than fresher material, showing that this character changes with the age of the specimen.

Very few adult males were seen. Of

fifteen stomachs examined, twelve contained fruit; one, a lizard; one a frog; and two, insect remains.

Parotia carolae chalcothorax
Stresemann

Bernhard Camp, 6 to 15 km. southwest:
3 ♀; January 30–March 2.

Found from 1,200 to 1,500 meters altitude.

WING.—♂ 143 mm., 144, 145.

The characters distinguishing this race are shown by the male; the present identification is on a geographical basis. The present series comes from about 60 kilometers east of the type locality. These females are indistinguishable from females of *carolae* from the Weyland Mountains.

Lophorina superba feminina
Ogilvie-Grant

Bele River Camp: 1 ♂ ad., 1 ♀ imm.;
November 22.

Balim River Camp: 1 ♂ ad.; December 13.

Bernhard Camp, 8 km. southwest: 1 ♂ ad.; February 12.

Found at 1,600 and 2,200 meters altitude.

WING.—♂ 135 mm., 138, 145.

Hartert (1932, Nova Guinea, XV, p. 481) has already recorded this form from this area (Doormanpad-bivak).

The males are like a male from the Weyland Mountains. The immature female still has the head and underparts in fluffy nestling plumage. The forehead is whitish, flecked with brown; the rest of the top of the head and hind neck and sides of neck are buffy brown, barred with black; from the forehead whitish lines extend back over the eyes to the nape; ear coverts brown like crown, flecked with black; throat and upper breast buffy white, finely flecked with black; rest of underparts buffy, irregularly barred with blackish. Compared with females of *feminina* from the Weyland Mountains the back is considerably more brownish.

A November male had enlarged testes.

Ptiloris magnifica magnifica Vieillot
Bernhard Camp: 4 ♂ ad., 2 ♂ imm.,
1 ♀; March 26–May 5.

Cyclops Mountains: 1 sex?; April 1.

Hollandia: 2 ♂ ad.; July 18, 19.

Found up to 50 meters altitude.

WING.—♂ ad. 181 mm., 185, 188, 191,
196; ♂ imm. 175, 176; ♀ 153.

Seleucidus ignotus auripennis Schluter

Bernhard Camp: 1 ♂ ad., 1 ♂ imm.;
April 27, May 1.

Found at 50 meters altitude.

WING.—♂ ad. 169 mm.; ♂ imm. 163.

Diphyllodes magnificus chrysopterus
Elliot

Bernhard Camp, 6 km. southwest: 3 ♂ ad., 6 ♂ imm., 4 ♀; February 13–March 6.

Bernhard Camp, 4 km. southwest: 2 ♂ ad., 2 ♂ imm., 5 ♀; March 9–April 1.

Found from 850 to 1,200 meters altitude.

WING.—♂ ad. 112 mm., 114, 114, 115,
115, 120; ♀ 105, 107, 107, 109, 109, 110,
110, 111, 112.

These birds compare well with a series from Jobi. In 1936 (Mitt. Zool. Mus. Berlin, XXI, p. 189) Hartert, *et al.*, recorded the Weyland Mountains bird as *chrysopterus*. They are obviously not that race but should be referred to *intermedius*, as a comparison with material from the southern slopes of the Snow Mountains shows.

For an account of the habits of this species, see 1940, Amer. Mus. Novitates, No. 1073, pp. 7–14.

Cicinnurus regius similis Stresemann

Bernhard Camp: ♂ ad., ♂ imm., ♀;
March 25–May 4.

Hollandia: ♂ ad., ♂ imm.; June 16–28.

Cyclops Mountains: 1 ♂ ad.; April 1.
Found up to 50 meters altitude.

WING.—♂ ad. (10) 95–99 mm. (av. 97.1); ♀ 95, 97, 97, 98, 98, 98.

Birds in breeding condition were taken in March (1), April (5) and June (1).

Paradisaea minor minor Shaw

Bernhard Camp: 1 ♂ ad., 3 ♂ imm.,
1 ♀; April 27–May 5.

Cyclops Mountains: 2 ♂ ad., 1 ♂ imm.,
2 sex?; April 3–October 18.

Hollandia: 5 ♂ ad., 3 ♂ imm., 3 ♀; June 16–July 16.

Found up to 50 meters altitude.

WING.—♂ ad. 182 mm., 183, 184, 187, 190; ♀ 159, 160, 160, 164.

Pteridophora alberti alberti Meyer

Lake Habbema, 9 km. northeast: 3 ♀; October 17, 26.

Bele River Camp: 5 ♀; November 12–December 3.

Bernhard Camp, 15 km. southwest: 1 ♀; February 1.

Found from 2,200 to 2,800 meters altitude on the north slope of the Snow Mountains, and at 1,500 meters on the Idenburg slope.

WING.—♀ (2,800 meters) 113 mm., 115, 115; (2,200 meters) 112, 113, 113, 114, 114; (1,500 meters) 110.

There is a slight correlation between increase in size and increase in altitude.

This series differs somewhat from a Weyland Mountains series only in the slightly darker back, slightly heavier barring on the underparts, especially posteriorly, and the somewhat more vividly colored under tail coverts.

No adult males were seen. Breeding females were taken in October (2), November (2) and December (1).

Loria loriae loriae Salvadori

Lake Habbema, 9 km. northeast: 2 ♂ ad., 1 ♀; October 23–30.

Bele River Camp: 2 ♂ ad., 2 ♂ imm., 1 ♀; November 21–December 1.

Bernhard Camp, 15 to 18 km. southwest: 2 ♂ ad., 2 ♀; January 10–February 3.

Found from 1,800 to 2,800 meters altitude.

WING.—♂ ad. 99 mm., 99, 103, 103, 104, 105; ♀ 102, 102, 102, 106.

There is no altitudinal variation in size. Compared with birds from southeast New Guinea the sheen of the wing is slightly more greenish blue, but the difference is small.

This bird was usually found sitting quietly or moving slowly about in the leafy substage, where it feeds on fruit. One

October and two November males had enlarged testes.

Archboldia papuensis Rand

Archboldia papuensis RAND, 1940, Amer. Mus. Novitates, No. 1072, pp. 9, 10—Bele River, 18 km. north of Lake Habbema, Snow Mountains.

Lake Habbema, 9 km. northeast: 1 ♂ ad., 2 ♀ ad.; October 11–29.

Bele River: 2 ♂ ad., 2 ♀ ad.; November 20–December 4.

Bernhard Camp, 18 km. southwest: 1 sex?; February 9.

Found from 2,150 to 2,800 meters altitude.

WING.—♂ ad. 155 mm., 155, 164; ♀ ad. 145, 147, 148, 153.

This new genus and species was one of the most interesting finds of the expedition.

Since the original description was published, Mr. A. C. V. van Bemmelen of the Zoologisch Museum, Buitenzorg, has written me that he has received a specimen of this bird from New Guinea and has kindly given me permission to publish the following details from his letter: "It is a male, badly damaged, but there can be no doubt it really is *Archboldia*. I cannot find a difference between my bird and yours. Only it seems to be somewhat smaller: wing 152; tail (central feathers) 124; culmen 23; bill from gape 29; tarsus 41. Locality: Bobare near Wisselmeren, W. Nw. Guinea, ± 1800 m. Colour of iris black. Leg. EECHOUD 14-X-1938."

Amblyornis macgregoriae mayri Hartert

Lake Habbema, 9 km. northeast: 4 ♀; October 30, November 1.

Bele River: 3 ♂ ad., 5 ♂ imm., 10 ♀; November 10–28.

Bernhard Camp, 15 km. southwest: 1 ♂ imm., 2 ♀; January 23–February 2.

Found from 1,800 to 2,200 meters altitude; specimens received at the higher camp were from natives who came from lower altitudes.

Compared with Weyland Mountains birds the present series differs in being slightly paler, and less brownish above and below; foxing is perhaps responsible for

the brownness of the older Weyland Mountains series.

Three females in breeding condition were taken in November.

Xanthomelus aureus aureus (Linné)

Bernhard Camp, 6 km. southwest: 1 ♂ ad., 1 ♀; February 19, 21.

Bernhard Camp, 4 km. southwest: 1 ♂ ad., 1 ♀; April 2, 5.

Found from 850 to 1,200 meters altitude.

WING.—♂ 140 mm., 145; ♀ 138, 141.

These are the same as Arfak birds. This is the most easterly record of this form.

Chlamydera cerviniventris Gould

Cyclops Mountains: 5 sex? ad., 1 sex? nestling; April 20–November 30.

WING.—143 mm., 143, 143, 145, 159.

Ailuroedus melanotis jobiensis

Rothschild

Bernhard Camp, 4 to 6 km. southwest: 4 ♂, 1 ♀; February 19–April 6.

Found from 850 to 1,200 meters altitude.

WING.—♂ 155 mm., 157, 161, 164; ♀ 153.

This series shows little variation. It has the upperparts about as in *melanocephalus* but differs from it and all the other races in the much blacker throat, the black extending onto the upper breast, and in the reduction in size of the buffy markings of the throat to spots usually less than half the width of the feathers. The race *arfakianus* also has a blackish throat with small spots on it, but is very different in the spotting of the head and throat being whitish, in the less extensive black of the throat, with more of a green band below it and in the paler, less brownish underparts.

These birds compare well with the type of *jobiensis* (wing 166 mm.) labelled "Jobi Island." This is an old trade skin of uncertain origin. The species has not since been taken on Jobi, nor are there any records for the Weyland Mountains, whence came many of the early trade skins.

At present it seems advisable to consider that the type came from the mainland of northwest New Guinea.

A March female was in breeding condition.

Ailuroedus buccoides geislerorum Meyer

Bernhard Camp, 6 km. southwest: 1 ♀; February 24.

Bernhard Camp, 4 km. southwest: 5 ♂, 2 ♀; March 8–April 6.

Bernhard Camp: 1 ♂, 1 ♀; March 23, May 3.

Hollandia: 1 ♀; July 23.

Found from sea level to 1,200 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
1,200 meters		132 mm.
850 "	132, 134, 134, 135, 138	127, 128
Near sea level	132	121

This shows a slight correlation between increase in size and increase in altitude.

It is interesting to note that the altitudinal range of this species is greater than that of *A. melanotis* and includes it. In the south New Guinea lowlands their ranges appear mutually exclusive. In southeast New Guinea *buccoides* appears to be a lowland species, *melanotis* a mountain bird.

Daphoenositta miranda frontalis

van Oort

Lake Habbema, 9 km. northeast: 8 ♂ ad., 2 ♂ imm., 3 ♀ ad.; October 10–26.

Bele River Camp: 1 ♂ imm.; November 18.

Bernhard Camp, 18 km. southwest: 3 ♂ ad., 1 ♂ imm., 1 ♀ ad.; February 5.

Found from 2,150 to 2,800 meters altitude.

WING.—♂ ad. (10) 85–90 mm. (av. 87.3); ♂ imm. 85, 85, 86, 88; ♀ ad. 83, 84, 85, 86.

The series of adults shows little variation. They compare well with a single male I have from Treub-bivak, south of Mt. Wilhelmina near the type locality of *frontalis*. This race differs from *miranda* of southeast New Guinea in the wider reddish forehead and the much more extensive reddish areas on the side of the face below the eye and on the throat.

The color of the soft parts, immature plumage and moult are similar to those of *miranda* (see Rand, 1936, Auk, LIII, pp. 306-309).

***Neositta papuensis alba* Rand**

Neositta papuensis alba RAND, 1940, Amer. Mus. Novitates, No. 1072, p. 10—15 km. southwest Bernhard Camp, Idenburg River.

Bernhard Camp, 15 km. southwest: 4 ♂ ad.; January 24.

Found at 1,800 meters altitude.

WING.—81 mm., 82, 82, 83.

***Neositta papuensis toxopeusi* Rand**

Neositta papuensis toxopeusita RAND, 1940, Amer. Mus. Novitates, No. 1072, p. 11—Bele River, 18 km. north of Lake Habbema.

Lake Habbema, 9 km. northeast: 1 ♀ imm.; October 21.

Bele River Camp: 1 ♂ ad., 2 ♂ imm.; December 1, 3.

Found at 2,200 and 2,650 meters altitude.

WING.—♂ 79 mm., 81, 82; ♀ 80.

The female and one of the immature males are moulting into adult plumage, retaining their wings and tail. The other immature male is in complete immature plumage, which differs considerably from that of the adult. The top of the head is blackish, each feather with a brownish white triangle at the tip; back brownish black, each feather with a white triangle at the tip; rump and upper tail coverts white; lores black; auriculars black; chin and throat white; breast and abdomen whitish, obscurely streaked with dusky; upper wing coverts tipped with brownish white, also secondaries; tail as in adult.

The white-headed nuthatch traveled in little bands of four to six, in the upper parts of the forest trees, exploring the smaller branches for its insect food.

***Climacteris placens inexpectata* Rand**

Climacteris placens inexpectata RAND, 1940, Amer. Mus. Novitates, No. 1072, p. 11—Lake Habbema, 9 km. northeast, Snow Mountains.

Lake Habbema, 9 km. northeast: 3 ♂, 6 ♀; October 14–November 4.

Bele River Camp: 1 ♂, 2 ♀; November 13–25.

Found from 2,200 to 3,000 meters altitude.

WING.—♂ 84 mm., 87, 88, 91; ♀ 83, 83, 83, 84, 85, 86.

The four males vary somewhat in the amount of olive tinge on the back, which is pronounced in one specimen and only slight in another. There is also some variation in the size and shade of the markings in the crown. The females exhibit more variation; five of the specimens have a rather pale grayish breast; one has a darker grayish breast; and one female is as dark and as brownish on the underparts as females of *meridionalis* from which it can be distinguished by the gray rump, upper tail coverts and tail. One female, apparently immature, is similar to the adult female, differing only in the slightly softer texture of the feathers of the upperparts, with faint blackish tips to some of the feathers of the back, and the shorter bill with the tip slightly brownish.

***Cinnyris sericea sericea* Lesson**

Hollandia: ♂, ♀; June 23–October 12.

Cyclops Mountains: ♂, ♀; March 29–April 21.

Bernhard Camp: ♂ ad., ♂ imm., ♀; March 19–April 28.

Found up to 150 meters altitude.

WING.—♂ (10) 59–64 mm. (av. 61.1); ♂ imm. 57, 58, 61; ♀ (7) 53–55 (av. 54).

The Bernhard Camp females are slightly darker above than other New Guinea birds.

Two breeding females were taken in April.

***Cinnyris jugularis frenata* (Müller)**

Hollandia: 9 ♂, 6 ♀; June 30–July 22.

Cyclops Mountains: ♂, ♀; March 29–April 22.

Found from sea level to 150 meters altitude.

WING.—♂ (10) 54–56 mm. (av. 55); ♀ (8) 51–53 (av. 51.8).

These birds are rather golden olive on the upperparts, very similar to Fly River birds.

***Cinnyris jugularis idenburgi* Rand**

Cinnyris jugularis idenburgi RAND, 1940, Amer. Mus. Novitates, No. 1072, p. 12—Bernhard Camp, Idenburg River.

Bernhard Camp: 4 ♂, 5 ♀; March 19–April 17.
Found at 50 meters altitude.

MEASUREMENTS

	Male	Female
Wing	53 mm., 53, 54, 55	49, 50, 50, 50, 52
Bill	18.5, 20, 20, 21	19.5, 20, 20
Tail	30, 30, 31	27, 28, 29, 29

This melanistic race, recalling the races *clementinae* and its relatives and *teysmanni*, was one of the striking finds of the expedition.

The examination of more New Guinea material confirms the opinion of Mayr and me (1937, Bull. Amer. Mus. Nat. Hist., LXXIII, p. 210) that *flavigaster* is a slightly differentiated race, on the basis of its lighter and more clear green upperparts. But that *valia* is different from *frenata* appears doubtful in the light of the more material available. Five Goodenough Island birds agree well with some southeast New Guinea and Daru Island birds; three from the Kumusi River are somewhat brighter yellowish green above; Fly River, Hollandia and Wassi Kussa birds are slightly darker golden olive, but the variation overlaps that of southeast New Guinea birds. Two males from Astrolabe Bay are rather clear greenish, but are in very worn plumage. A series of seven males from Manokwari is rather uniform and differs somewhat from the birds from the rest of New Guinea in the darker, clearer green, not golden olive upperparts and the paler yellow underparts. But two Kapaur birds are like those from the rest of New Guinea.

The individual variation in plumage, complicated by wear, makes it inadvisable to recognize any slight races in New Guinea, though the present material available suggests that Arfak birds may be slightly different. If so the identity of Lobo Bay birds must be determined.

This bird is sometimes said to live only along the coast, but second growth and forest edge conditions at low altitudes seem to be its habitat, irrespective of proximity to the sea. Thus I found it commonly about the forest edges of the swamps and savannas of the middle Fly River, and

in 1933 up to 450 meters altitude in southeast New Guinea, as well as near the coast on all three expeditions.

Timeliopsis fulvigula montana
Mayr

Lake Habbema, 9 km. northeast: 1 ♂; October 18.

Bele River Camp: 1 ♀; November 17.
Bernhard Camp, 15 to 18 km. southwest: 2 ♂; January 15, February 5.

Found from 1,800 to 2,700 meters altitude.

WING.—♂ 77 mm., 77, 79; ♀ 77.

Three specimens from Mt. Goliath, including the type, have more of a brownish tinge in the top and sides of the head, perhaps the result of foxing; otherwise they compare well with the present specimens, as do two Weyland Mountains birds.

Glycichaera fallax sylvia (Reichenow)

Bernhard Camp, 4 km. southwest: 2 ♀; March 30, 31.

Bernhard Camp: 2 ♂, 2 ♀; April 19–May 2.

Hollandia: 1 ♂, 1 ♀; June 26, 30.

Found up to 850 meters altitude.

WING.—♂ 55 mm., 58, 59; ♀ 52, 53, 54, 55, 56.

This series differs considerably from two adult males and one adult female from Baroka, Kubuna, and the Aroa River (typical *fallax*) in the smaller bill, the darker upperparts and side of the head and the more grayish throat and breast. As birds from Astrolabe Bay differ from typical *fallax* in the same manner but to a lesser degree, it seems advisable to recognize the name *sylvia* for these birds.

Oedistoma pygmaeum pygmaeum
Salvadori

Bernhard Camp, 4 km. southwest: 1 ♂; April 2.

Hollandia: 2 ♀; June 30, July 1.

Found near sea level and at 850 meters altitude.

The pygmy honeyeater was a scarce bird in this area. The 850-meter specimen was shot in a tall flowering tree to which many species of birds came to feed. The April male had enlarged testes.

Myzomela eques primitiva

Stresemann and Paludan

Bernhard Camp, 6 km. southwest: 1 ♂ imm., 1 ♀ ad.; February 24, 28.

Bernhard Camp, 4 km. southwest: ♂ ad., ♂ imm., ♀ ad.; March 9–April 3.

Bernhard Camp: 1 ♀ ad.; April 30.

Cyclops Mountains: 1 ♂ ad.; April 3.

Hollandia: 4 ♂ ad., 3 ♀ ad., 3 ♀ imm.; June 26–July 16.

Found up to 1,200 meters altitude.

WING.—♂ ad. (10) 70–75 mm. (av. 72.2); ♀ ad. 59, 59, 59, 59, 60, 60, 61.

There is no increase in size with increase of altitude.

This was the commonest of the honeyeaters that gathered to feed in the high flowering trees at the 850-meter Camp; probably twenty or thirty were in one large tree at one time. At the 1,200-meter Camp it also came to feed on the large white flowers of a climbing vine that were attractive to some lorries. Though many of the specimens showed some enlargement of gonads, only one male, April 2, was in breeding condition.

Myzomela cruentata cruentata Meyer

Bernhard Camp, 6 km. southwest: 1 ♂, 1 ♀; February 17, 26.

Bernhard Camp, 4 km. southwest: 8 ♂, 2 ♀; March 12–April 3.

Hollandia: 3 ♂; July 7–18.

Found from 850 to 1,200 meters altitude on the Idenburg slope, and near sea level at Hollandia.

WING MEASUREMENTS

Altitude	Male	Female
850–1,200 meters	56 mm., 57, 57, 57,	51
	57, 58, 58, 58	
Sea level	58, 60, 61	

At the 850-meter Camp this was one of the common honeyeaters that flocked to feed at the blooms of some of the tall forest trees. It was rarely seen otherwise. Breeding birds were taken in February (1), March (3) and April (1).

Myzomela nigrita meyeri Salvadori

Bernhard Camp, 4 km. southwest: 9 ♂ ad., 4 ♂ imm.; March 10–April 2.

Hollandia: 1 ♂ ad., 6 ♂ imm., 1 ♀; July 18–23.

Found at 850 meters altitude on the Idenburg slope, and near sea level at Hollandia.

WING.—♂ ad. 59 mm., 60, 61, 62, 62, 62, 63, 63, 64; ♂ 56.

The female is in the "normal" gray plumage; the immature males are in similar plumage.

The black honeyeater was one of the species that gathered to feed at the blooms of tall forest trees at the 850-meter Camp, along with other honeyeaters and parrots. Breeding birds were taken in March (5) and April (1).

Myzomela rosenbergii rosenbergii

Schlegel

Mt. Wilhelmina, 2 km. east: 1 ♂ ad.; September 15.

Mt. Wilhelmina, 7 km. east: ♀; September 12.

Lake Habbema: ♂ ad.; August 3–24.

Lake Habbema, 9 km. northeast: ♂ ad., ♀; October 21–November 6.

Bele River: ♂ ad., ♀; November 12–December 1.

Balim River: ♂ ad., ♀; December 11, 19.

Bernhard Camp, 15 to 18 km. southwest: ♂ ad.; January 15–February 9.

Found from 1,600 to 3,800 meters altitude.

WING MEASUREMENTS

Altitude	Males	Females
3,225–3,800 meters	65–66 mm.	61
2,200–2,800 "	63–66	57–60
1,600–2,150 "	62–64	59

This shows a very slight increase in size with increase of altitude.

Breeding birds were taken in August (1), October (2), November (10) and December (2).

Toxorhamphus novae-guineae novae-guineae (Lesson)

Bernhard Camp, 6 km. southwest: 1 ♂, 2 ♀; February 13–March 4.

Bernhard Camp, 4 km. southwest: 8 ♂, 8 ♀; March 11–April 6.

Bernhard Camp: 3 ♂, 3 ♀; April 4–

30.

Hollandia: ♂, ♀; June 26–October 10.
Found from sea level to 1,200 meters altitude.

Wing.—♂ (10) 67–72 mm. (av. 69.7);
♀ (10) 58–62 (av. 60.5).

There is no variation in size with altitude.
These compare well with Arfak material.
One April male had enlarged testes.

Toxorhamphus iliolophus iliolophus
(Salvadori)

Bernhard Camp, 15 km. southwest: 1 ♂, 2 ♀; January 28, February 1.

Bernhard Camp, 8 km. southwest: 1 ♂, 1 ♀; February 12.

Bernhard Camp, 6 km. southwest: 8 ♂, 3 ♀, 1 sex?; February 13–March 6.

Bernhard Camp, 4 km. southwest: 9 ♂, 2 ♀; March 10–April 3.

Hollandia: 2 ♂; July 2, 9.

Found near sea level at Hollandia, and from 850 to 1,600 meters altitude on the Idenburg slopes.

Wing.—♂ (10) 61–67 mm. (av. 64.6); ♀ 58, 58, 58, 60, 61, 61, 61, 61, 62.

There is no variation in size with altitude.
Compared with three Jobi birds the present series is slightly more deeply colored above, but the difference is trifling.

Frequently two of these birds were seen chasing each other through the undergrowth and substage in the forest. They have a distinctive, throaty, two-syllable call. One April male had enlarged testes.

Toxorhamphus poliopterus maximus
Rand

Toxorhamphus poliopterus maximus RAND, 1941, Amer. Mus. Novitates, No. 1102, p. 13—15 km. southwest of Bernhard Camp, Idenburg River.

Bernhard Camp, 15 km. southwest: 2 ♂ ad.; January 29–February 2.

Bernhard Camp, 6 km. southwest: 1 ♂? imm., 1 ♀ ad., 1 ♀ imm.; February 23–March 4.

Found at 1,200 and 1,500 meters altitude.

Wing.—♂ ad. 73 mm., 78; ♂? imm. 68; ♀ ad. 62; ♀ imm. 62.

BILL.—♂ ad. 35 mm., 36; ♂? imm. 36; ♀ ad. 30.

Melilestes megarhynchus stresemanni
Hartert

Bernhard Camp, 6 km. southwest: 5 ♂ ad., 2 ♂ imm., 5 ♀ ad., 1 ♀ imm.; February 16–March 16.

Bernhard Camp, 4 km. southwest: 2 ♂ ad.; April 1.

Bernhard Camp: 4 ♂ ad., 1 ♀ ad.; March 19–April 25.

Found from 50 to 1,200 meters altitude.

Wing.—♂ ad. (10) 97–104 mm. (av. 101.1); ♀ ad. 90, 91, 92, 92, 93, 96.

The individual variation in this series is not great. Compared with the type of *stresemanni* this series averages slightly less brownish on the upperparts. Hartert (1932, Nova Guinea, XV, p. 476) records *megarhynchus* from the Mamberamo, but this material is very different from the typical race.

A February and an April male had enlarged testes.

Melipotres fumigatus goliathi
Rothschild and Hartert

Lake Habbema: 1 ♂ ad., 1 ♀ ad.; August 5, 24.

Lake Habbema, 9 km. northeast: ♂ ad., 5 ♀ ad.; October 13–28.

Bele River: 3 ♂ ad., ♀ ad., 3 ♀ imm.; November 9–December 3.

Bernhard Camp, 15 to 18 km. southwest: ♂ ad., ♀ ad.; January 8–February 7.

Found from 1,800 to 3,225 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
3,225 meters	120 mm.	117
2,800 "	121–128	110–117
2,200 "	120–125	108–118
2,150 "	"	109, 111
1,800 "	114–119	106, 110

The birds from the Idenburg slopes (1,800 to 2,150 meters) are much smaller than those from the Wilhelmina slopes, indicating that altitudinal races might be recognizable. The type of *goliathi*, a male, has a wing of 118 mm., definitely putting it with the smaller form. However, measurements of material from the Cyclops Mountains (Hartert, 1930, Nov. Zool., XXXVI, pp. 45, 46) and from the Hunsteinspitze

("anthophilus" Stresemann, 1923, Arch. für Naturgesch., LXXXIX, p. 55) indicate that it is impractical to separate two races on size.

Of four stomachs examined, all contained fruit only. Breeding birds were taken in August (1), October (4) and November (2).

Melidectes fuscus occidentalis

Junge

Bele River Camp: 1 ♀; December 3.

Natives brought in this one specimen at 2,200 meters altitude.

WING.—95 mm.

Junge (1939, Nova Guinea, [N.S.] III, p. 59) described this strikingly small race from six specimens collected on the southern slope of Mt. Wilhelmina in 1909 and 1913. There is also an incomplete specimen known from the south slope of Mt. Carstensz (1915, Ibis, Jub. Sup., No. 2, p. 60).

Melidectes nouhuysi (van Oort)

Mt. Wilhelmina, 2 to 7 km. northeast: ♂, ♀; August 31–September 27.

Lake Habbema: ♂, ♀; July 28–August 29.

Found from 3,225 to 4,100 meters altitude.

WING.—♂ (10) 132–143 mm. (av. 140.2); ♀ (10) 120–130 (av. 126.6).

Color of soft parts: iris dark, bare skin behind eye chrome yellow, bill black, feet brownish black.

This species had been collected previously only by the 1909 and 1913 Netherlands New Guinea Expeditions on the south slopes of Mt. Wilhelmina.

As Junge (1939, Nova Guinea, [N.S.] III, p. 58) has pointed out, there is a bare area of skin behind the eye (not below and in front of the eye as his plate shows).

The female differs from the male in its smaller size.

The first year plumage of male and female, acquired by a partial moult, remiges and rectrices being retained, differs from that of the adult in having the breast slightly washed with olive, the light colored markings of the lower breast and abdomen yellowish, the fluffy under tail coverts

buffy to ochraceous, and the lengthened feathers of the chin and throat dull yellow, mixed with whitish. One specimen, however, which still has a few fluffy, sooty black feathers in the back, probably of the nestling plumage, has the lengthened feathers of the chin and throat white, indicating that there is a variation in this.

The bearded honeyeater was perhaps the most common bird of the open forest and shrubby country of timber line conditions. Its downward range was stopped by the closed forest into which it did not venture; its upward limit was marked by the last outposts of scattered shrubs which straggled up some little gully or grew in the shelter of some rock at about 4,100 meters. It was seen up in the trees but was characteristically a bird of the shrubbery, where it spent much of its time on the ground and where many were caught in rat traps.

It was not shy but somewhat secretive. When pursued it hopped away rapidly through the shrubbery, with its long tail cocked up, and flew with jerky flight from one clump of shrubs to another, ahead of the pursuer.

As with many high altitude species, its diet is varied; stomachs examined contained fruits of trees and shrubs, seeds of a sedge and insect remains.

One nest found August 10 was about four feet up in a multiple fork of a rather isolated, bushy shrub in open *Libocedrus* country. The nest was fairly well concealed by the surrounding twigs and leaves and could not be seen from a short distance away.

The nest was a loose, bulky structure composed of moss, liverworts and thread-like fungi, with a firmer cup lined scantily with grass stems, fern stems, some weathered vegetable fiber, scales from the base of tree fern stipes, and some feathers, chiefly from the duck *Salvadorina*. These last were probably gathered on the lake shore about 100 yards distant.

The nest measured outside 160 by 200 mm. deep, inside 75 by 60 mm. deep.

The single egg was in shape elongate ovate, rather blunt on the smaller end; shell fairly smooth with a slight gloss;

color earthy pink marked with small spots and dots of brownish, all heavily overlaid with the pink of the general shell color, the markings forming a wreath about the larger end and sparsely scattered over the rest of the egg; measurements 20 by 31 mm.

Melidectes belfordi kinneari Mayr

Mt. Wilhelmina, 7 km. east: 4 ♂, 5 ♀; August 31–September 26.

Lake Habbema: 5 ♂, 2 ♀; August 3–23.

Lake Habbema, 9 km. southwest: ♂, 12 ♀; October 11–24.

Bele River: 1 ♂, 1 ♀; November 23, 27.

Balim River: 1 ♀; December 15.

Bernhard Camp, 15 to 18 km. southwest: ♂, ♀; January 24–February 9.

Found from 1,800 to 3,600 meters altitude.

The bill is black.

WING MEASUREMENTS

Altitude	Male	Female
3,600 meters	144–150 mm.	121–127
3,225 "	136–151	128, 134
2,800 "	138–151	125–135
2,200 "	133	125
2,150 "	140, 142	127, 128
1,800 "	133–144	116–127

Though the variation in size correlated with altitude is considerable, the lack of any definite break in the series of measurements, preventing separation into two series, and the lack of significant color differences make it inadvisable to name altitudinal races, though the total size variation (wing ♂ 133–151 mm.) is greater than in *belfordi* and *brassi* (wing ♂ 139–153 mm.) which represent each other altitudinally in southeast New Guinea.

The present series differs from *belfordi* and *brassi* in the paler gray coloration above, with paler edgings to the feathers; in the paler gray underparts; and in the brighter, more yellowish green outer edges of the remiges. The race *griseirostris* from Mt. Goliath is easily separable by the bluish gray bill and the larger wattle at the corner of the mouth. The Weyland Mountains race *joiceyi* is smaller (wing ♂

126–134 mm.) and very different in color, having an olivaceous back.

It is with misgivings that I apply the name *kinneari* to these birds. I have no topotypical material of *kinneari*, but Ogilvie-Grant (1915, Ibis, Jub. Sup., No. 2, p. 62) could not separate material from the Utakwa River from typical *belfordi*; Mayr described *kinneari* (1936, B.B.O.C., XLVII, p. 42) as similar to *brassi* but differing in smaller size and olive wash to the gray edges of the back. The size given for *kinneari* (wing ♂ 133 mm., 138, 139) falls within that of the present series. A few of the present series have a very faint olivaceous wash on the gray of the upperparts, but some southeast New Guinea birds have a still more pronounced olivaceous wash on the upperparts.

Until Utakwa River material can be compared with the present material, it is advisable to keep these birds provisionally as *kinneari*.

One stomach examined contained insects only; another, insects and fruit. Breeding birds were taken in August (1), September (1) and October (3).

Melidectes torquatus mixtus Rand

Melidectes torquatus mixtus RAND, 1941, Amer. Mus. Novitates, No. 1102, p. 14—Balim River.

Bele River Camp: 1 ♀; November 13.

Balim River Camp: 6 ♂, 3 ♀; December 9–19.

Found at 1,600 and 2,200 meters altitude.

WING.—♂ 119 mm., 120, 120, 122, 122, 123; ♀ 111, 112, 117.

This honeyeater was not a true forest bird; it was fairly common in the secondary forests of the Grand Valley.

Oreornis chrysogenys van Oort

Mt. Wilhelmina to 7 km. east: 9 ♂, 3 ♀; September 4–26.

Lake Habbema: ♂, 7 ♀, 1 sex?; August 1–28.

Found from 3,225 to 4,000 meters altitude.

WING.—♂ (10) 127–142 mm. (av. 135.2); ♀ 123, 125, 127, 127, 128, 128, 129, 130.

This species had not been collected since the Netherland expedition to the Snow Mountains, 1909-1913. The figure published by Junge (1937, Nova Guinea, N.S., I, Pl. 11) is much darker than any of this series (and one 1913 specimen from Water-val-bivak) and gives few details of plumage. Van Oort's description (1910, Notes Leyden Mus., XXXI, p. 215) omits many details. The following description is taken from the present series.

MALE AND FEMALE.—Top of head, neck and back dark olive green, each feather with a dusky center giving an obscurely streaked appearance; rump nearly uniform, paler grayish olive; upper tail coverts paler olive green; upper secondary coverts dusky, broadly edged with dark olive green, slightly paler than that of back; primary coverts dusky, broadly edged with citrine; remiges brownish black, the outer edges of the inner secondaries olive green, much brighter, more citrine green on the distal feathers; inner edges of remiges ochraceous except for the tip; central rectrices dark olive green, others brownish olive, all edged with citrine like the remiges; there is a tendency toward pale tips to the rectrices; a small area in front of and below eye dark silvery gray; feathers above eye sometimes glossed with silvery gray; side of head from bill to below eye deep orange yellow; small area behind eye grayish black, extending downward to separate partially the pale yellow auricular area from the deeper yellow below the eye; feathers of chin silvery gray, tipped with olive; throat and breast olive green, darker centers to the feathers giving an obscurely streaked appearance; flanks and abdomen more uniform grayish olive; under tail coverts grayish olive, broadly edged with buffy white; thighs yellow; under wing coverts pale ochraceous, except those at bend of wing which are bright rust yellow; iris brownish gray; bill black, gape yellow; feet yellow, nails dark gray.

There is no pronounced variation in the series.

This big honeyeater was a fairly common bird of the open forests, forest edges and scattered shrubbery. A very few shrubs

in the alpine grass seemed enough to ensure its presence. It was often seen sitting up straight on the tops of trees or shrubs in conspicuous places. In feeding it often hopped about on the ground, where marshy places gave areas of very short grass. Of six stomachs examined, five contained fruit only, and one, seeds of a sedge and insect remains.

One male in breeding condition was taken in August, and a nest was found August 25.

The nest was about five feet up on the bases of the leaves of a tree fern. This tree fern was one of a scattered group of tree ferns in grass country about a hundred and fifty yards from any forest. The nest itself, which rested on parts of several leaves, was a basin-shaped structure with a loose outer part composed chiefly of a coarse moss and lichens, and a firm inner cup consisting mainly of grass stems and some fern stems. It had a thick felted lining of the scales and down from the leaves of tree ferns. There were a number of small feathers in the lining. It measured outside 110 by 200 mm. wide, inside 50 by 95 mm. wide.

The nest contained a single egg. The egg was elongate-ovate, shell smooth with a slight gloss, color pale pink, marked with reddish brown medium to small-sized spots, some of which were overlaid with the color of the shell to give secondary grays. These markings were almost all congregated on the larger end of the egg where they were fairly plentiful. It measured 32.75 by 21 mm.

Oreornis subfrenatus melanoaema
(Reichenow)

Mt. Wilhelmina, 7 km. east: 1 ♂; September 11.

Lake Habbema: 2 ♂, 3 ♀; August 5-12.

Lake Habbema, 9 km. northeast: 4 ♂, 2 ♀; October 18-November 5.

Bele River: 4 ♂, 3 ♀; November 10-December 2.

Bernhard Camp, 15 km. southwest: 3 ♂, 3 ♀; January 15, 25.

Found from 1,800 to 3,600 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
3,600 meters	103 mm.	
3,225 "	105, 107	92, 93, 95
2,800 "	95, 100, 102, 103	90, 93
2,200 "	95, 102, 103	89, 90, 93
1,800 "	95, 101, 103	89, 90, 90

This shows a slight correlation in the female between increase in size and increase in altitude.

This species shows a gradation from a dark bird in southeast New Guinea to a paler olive bird in the Weyland Mountains.

The present series compares well with one specimen from the Schraderberg. However, this material is not identical with a Weyland Mountains series. The latter differs in the considerably more olive wash on the underparts, the less blackish throat and the paler green upperparts. That this is not a matter of foxing is proved by the fact that these differences are still shown by the 1913 north New Guinea specimen.

Stresemann and Paludan (1936, Mitt. Zool. Mus. Berlin, XXI, p. 197) did not separate the Weyland Mountains birds from *melanolaema*, but the present material shows this must be done. The name *olivascens* Rothschild was based on Weyland Mountains birds, but the name *utakwensis* Ogilvie-Grant is older and probably is applicable to them.

This was a bird of the forest tree tops, where it fed on insects. Breeding birds were taken in October (1) and November (1).

Xanthotis chrysotis philemon

Stresemann

Bernhard Camp, 6 km. southwest: 1 ♂, 1 ♀; February 13, 19.

Bernhard Camp, 4 km. southwest: 1 ♂, 1 ♀; March 8, 16.

Bernhard Camp: 7 ♂, 10 ♀; April 10–May 1.

Cyclops Mountains: sex?; April.

Hollandia: 4 ♂, 1 ♀; June 30, July 1.

Found from sea level to 1,200 meters altitude.

WING.—♂ (10) 98–109 mm. (av. 104.1); ♀ (10) 95–102 (av. 97.8)

There is some variation in this series, correlated with geographical distribution.

The 1,200-meter birds are darkest, with least brownish; the Hollandia birds are palest, with most brownish. Compared with a series of Jobi birds the Jobi series is considerably paler, though the brownish tinge of individual specimens can be matched by the Hollandia specimens. I have no typical *philemon*, but Stresemann and Paludan (1932, Nov. Zool., XXXVIII, p. 223) have included the Hollandia birds with *philemon*.

Birds with enlarged gonads were taken in April (2), June (2) and July (1).

Xanthotis polygramma septentrionalis
Mayr

Bernhard Camp, 1 km. southwest: 5 ♂ imm., 1 ♀; February 22–March 5.

Hollandia: 1 ♂, 1 ♀ imm.; June 29, July 18.

Found at sea level and 1,200 meters altitude.

WING.—♂ (1,200 m.) 75 mm., 76, 77, 78, 78, (sea level) 79; ♀ (1,200 m.) 73, (sea level) 69.

Compared with a single Arfak adult the two adults differ in having the upperparts paler and duller, in almost lacking white tips to the back feathers and in the reduced size of the yellow of the ear coverts. I have no specimens of *septentrionalis* Mayr from the Sepik for comparison. It was described as having the yellow ear coverts extremely small, upperside darker, olive green edges of the feathers narrower, white edges of the middle of the back almost completely lacking.

At the 1,200-meter Camp this honeyeater came singly to feed at the large white flowers of a climbing vine.

Lichmera alboauricularis olivacea Mayr

Bernhard Camp: 10 ♂ ad., 11 ♀ ad.; March 21–April 29.

Found at 50 meters altitude.

WING.—♂ (10) 69–74 mm. (av. 71.5); ♀ (10) 63–67 (av. 64.7).

These compare well with the type.

This honeyeater was a common bird in an open stand of reeds in one corner of the marsh along the lagoon edge, and it was occasionally found in the second-growth

trees along the waterways. They apparently searched for their insect food in the cane grass. The song, often heard, was a coarse trill. Most of the specimens were in breeding condition. A nest found April 24 near Bernhard Camp was probably that of this species. It was attached to reed stems about six feet above the water.

Meliphaga virescens sonoroides (Gray)

Hollandia: 1 ♀ ad.; July 6.

Found at sea level.

WING.—98 mm.

Identical with a series of Waigeu birds.

Meliphaga aruensis sharpei

(Rothschild and Hartert)

Bernhard Camp, 4 km. southwest: 1 ♀; March 28.

Bernhard Camp: 1 ♂; April 26.

Hollandia: 1 ♂, 1 ♀; July 2, November 4.

Found from sea level to 850 meters altitude.

WING.—♂ 91 mm., 91; ♀ 82, 83.

Compared with the type these specimens have as long or longer ear tufts, somewhat more intensely colored; they are slightly darker and more yellowish on the underparts; slightly brighter greenish olive, less brownish olive on the upperparts. It is interesting that in this species, as in *analoga*, the yellower populations should occur in this area.

Meliphaga montana sepik Rand

Bernhard Camp, 6 km. southwest: 1 ♂ imm., 1 ♀ ad.; February 25, 26.

Bernhard Camp, 4 km. southwest: 4 ♂ ad., 2 ♀ ad.; March 13–April 5.

Found at 800 and 1,200 meters altitude.

WING.—♂ ad. 86 mm., 87, 88, 90; ♂ imm. 83; ♀ ad. 78, 79, 83.

Some specimens have a slight brownish wash on the breast; others lack it. The series compares well with the type and differs from *steini* and *germanorum* as indicated in the original description.

The immature bird, in first year plumage, differs from the adult chiefly in the rounded tip of the outer primary and the yellowish white, not white, auricular patch.

One stomach examined contained fruit. An April male had enlarged gonads.

Meliphaga analoga flavida

Stresemann and Paludan

Bernhard Camp: 10 ♂, 8 ♀; March 24–May 5.

Cyclops Mountains: 1 ♂; March 29.

Hollandia: 7 ♂, 3 ♀; June 23–October 17.

Found up to 50 meters altitude.

WING.—♂ (10) 76–83 mm. (av. 80.3);

♀ (10) 73–77 (av. 75.6).

BILL.—♂ (10) 15.5–17 mm. (av. 16.1);

♀ (10) 14–16 (av. 14.8).

That the color of the upperparts foxes greatly is shown by comparing four specimens from Humboldt Bay taken in 1928 with material from the same area taken in 1938. The former are considerably more brownish olive, less clear greenish olive above. Some specimens of *flavida* from Jobi (collected in 1931) are nearly indistinguishable from two of the 1928 Humboldt Bay specimens, though the former average more yellowish olive above. The fresh material from the Idenburg River is somewhat deeper, more clear green on the upperparts than the fresh Hollandia material, but this difference is trifling. On the underparts the Hollandia birds compare fairly well with Jobi Island *flavida*, while the Idenburg River birds are slightly yellower. This shows a tendency toward the yellower mountain bird. Astrolabe Bay birds (collected in 1928) are somewhat darker, clearer green above and slightly paler yellowish below than Jobi birds, showing a tendency toward *analoga*, but should be considered *flavida* on the basis of their yellowish underparts, which easily distinguish them from the Weyland Mountains and Arfak *analoga* which are grayer below.

There is one puzzling specimen, an adult male, from Bernhard Camp. While otherwise the series from that locality is very uniform, this specimen differs markedly in the much duller olive green upperparts and in almost lacking any yellow tinge on the underparts. It is almost identical with specimens of *analoga* from the upper Fly River.

Two stomachs examined contained fruit. Birds in breeding condition were taken in March (1), April (3) and May (1).

Meliphaga analoga citreola Rand

Meliphaga analoga citreola RAND, 1941, Amer. Mus. Novitates, No. 1102, p. 14—6 km. southwest of Bernhard Camp.

Bernhard Camp, 4 km. southwest: 2 ♂; April 1, 2.

Bernhard Camp, 6 km. southwest: 13 ♂, 3 ♀; February 13—March 6.

Found from 850 to 1,200 meters altitude.

WING.—♂ (10) 73–79 mm. (av. 76.1); ♀ 72, 72, 74.

Meliphaga flavirictus crockettorum

Mayr and de Schauensee

Bernhard Camp: 1 ♀ ad.; April 30.

Found at 50 meters altitude.

WING.—73 mm.

BILL.—145 mm.

This specimen differs strikingly from a series from the Fly River and Yule Island area of southeast New Guinea and agrees with the description of a bird from the upper Watut (Rand, 1936, Amer. Mus. Novitates, No. 872, p. 22) and the description of the type from the Arfak Peninsula. A specimen from the south slope of the Snow Mountains (♂ ad., wing 79 mm.) is somewhat intermediate between the present specimen and a series of this species from the Fly River area but belongs with *crockettorum*, as Mayr and de Schauensee (1939, Proc. Acad. Nat. Sci. Phila., XCI, p. 142) have said.

Ptiloprora meekiana occidentalis Rand

Ptiloprora meekiana occidentalis RAND, 1940, Amer. Mus. Novitates, No. 1072, p. 13—Bele River, 2,200 meters.

Bele River Camp: 4 ♂, 7 ♀; November 12–29.

Lake Habbema, 9 km. northeast: 3 ♂, 4 ♀; October 18–November 6.

Found from 2,200 to 2,800 meters altitude.

WING.—♂ 82 mm., 84, 86, 91, 92; ♀ (10) 77–82 (av. 79.6).

This honeyeater was fairly common and usually found gleaning for its insect food through the top of substage trees, fre-

quently as part of a mixed flock of birds. Three stomachs contained insects only. One November female had an enlarged ovary.

Ptiloprora erythropleura dammermani Stresemann and Paludan

Lake Habbema, 9 km. northeast: 1 ♀; October 30.

Bele River Camp: 1 ♀; November 22.

Found from 2,200 to 2,800 meters altitude.

WING.—♀ 80 mm., 82.

These two specimens compare well with Weyland Mountains birds.

Ptiloprora guisei lorentzi (van Oort)

Mt. Wilhelm, 7 km. east: 1 ♂ ad., 2 ♀ ad.; August 31–September 10.

Lake Habbema: 3 ♂ ad., 4 ♀ ad.; August 4–23.

Lake Habbema, 9 km. northeast: ♂ ad., 2 ♂ imm., ♀ ad., 1 ♀ imm.; October 10–November 4.

Bele River Camp: 1 ♂ ad., 1 ♂ imm., 2 ♀ ad., 1 ♀ nestling; November 13–29.

Bernhard Camp, 18 km. southwest: ♂ ad., 2 ♀ ad.; February 6, 7.

Bernhard Camp, 15 km. southwest: ♂ ad., ♀ ad.; January–February 4.

Found from 1,900 to 3,600 meters altitude.

Altitude	WING MEASUREMENTS	
	Male	Female
3,600, 3,700 meters	103 mm., 104	101
3,225 meters	99, 100, 106	89, 94, 95, 95
2,800 "	95, 96, 102, 104, 106	89, 90, 91, 92, 92, 93, 94, 94
2,200 "	101	87, 91
2,150 "	95, 97, 99, 99	88, 91
1,800 "	(10) 95–101 (av. 98.8)	85, 85, 87, 87, 87, 88, 88, 89

In addition to the increase in size with the increase in altitude the birds from the lowest altitudes have slightly more pronounced grayish edges to the feathers of crown and back than do those from the highest altitudes. However, there is no conspicuous break in the series, and the differences are slight, so that no additional races can be recognized. In the Snow Mountains (see also Junge, 1939, Nova

Guinea, [N.S.] III, p. 64), it contrasts with the condition in southeast New Guinea, where two very different races represent each other altitudinally.

There is some variation in the color of the rump. In some specimens it is more brownish rufous, in others more olive grayish. Birds from the Weyland Mountains (collected in 1931) average slightly paler and more brownish on the rump, as do Wandamen birds (collected in 1928); a series from Mt. Goliath (collected in 1911) averages somewhat more paler brownish on the rump than any of these. These are the kinds of differences one might expect from foxing of the older material.

The Wandamen birds (*praedicta*) are separable on the character of the wider gray edgings of the feathers of the underparts and the paler, duller flanks, but the Weyland Mountains, Mt. Wilhelmina and Mt. Goliath birds have no other characters on which they can be separated and should be grouped together under the name *lorentzi*.

The streaked honeyeater is one of the commonest mountain birds and catholic in its choice of habitats. It was found in open and dense forest, in undergrowth close to the ground and in the tree tops. It was usually solitary, climbing about, gleaning for insect food from twigs, leaves and stems, or visiting flowers. Its call note was a distinctive whistled "wheu." Birds with enlarged gonads were taken in February (4), October (2) and November (2).

***Pycnopygius stictocephalus* (Salvadori)**

Bernhard Camp: 2 ♂ ad., 2 ♀ ad.; March 26–April 27.

Cyclops Mountains: 2 sex? imm.; April 6, 7.

Found up to 50 meters altitude.

WING.—♂ ad. 110 mm., 110; ♀ ad. 108, 110.

These birds have more white, less blackish brown in the throat than does a series from south New Guinea.

The effects of wear and fading in this species are very pronounced, as in the genus *Philemon*. The remnant of the first year plumage in the crowns of the immature birds is not brownish black, the feathers

being tipped with gray, as is the crown of a Wuroi (south New Guinea) bird in first year plumage, but is worn and brownish.

***Pycnopygius ixoides proximus*
(Madarász)**

Bernhard Camp: 3 ♂, 2 ♀; March 24–April 30.

Found at 50 meters altitude.

WING.—♂ 90 mm., 92, 94; ♀ 83, 84.

This series is slightly darker above than are two Sepik birds but otherwise agrees well with them.

Though widespread in New Guinea and not uncommon in some places, this species is rather rare in collections.

***Philemon meyeri* Salvadori**

Bernhard Camp, 6 km. southwest: 5 ♂ ad., 2 ♂ imm., 1 ♀ ad., 1 ♀ imm.; February 19–March 6.

Bernhard Camp, 4 km. southwest: 1 ♂ ad.; March 31.

Bernhard Camp: 2 ♂ ad., 1 ♀ ad., 1 sex?; April 19–May 1.

Cyclops Mountains: 1 sex?; March 29.

Hollandia: 3 ♂ ad.; June 30, July 5.

Found up to 1,200 meters altitude.

WING.—♂ ad. (10) 107–114 mm. (av. 109.6); ♀ ad. 105, 110.

There is no variation in size correlated with altitude.

***Philemon brassi* Rand**

Philemon brassi RAND, 1940, Amer. Mus. Novitates, No. 1072, p. 13—Bernhard Camp, Idenburg River.

Bernhard Camp: 8 ♂ ad., 1 ♂ imm., 11 ♀ ad., 2 ♀ imm., 1 sex?; March 22–April 29.

Found at 50 meters altitude.

WING.—♂ (6) 102–106 mm. (av. 103.2); ♀ (9) 98–102 (av. 99.9).

As with other members of this genus the effects of wear are very pronounced, the plumage changing from dark brown to pale grayish brown.

The nestling plumage can be reconstructed from remnants on the immature birds. It is fluffier than the first year plumage and differs from the adult plumage in color in being more rufous-tinged on the crown and back; the breast is more brown-

ish; the abdomen and under tail coverts are about as in the adult; the remiges are deeper ochraceous on their inner edges and marked with olive on their outer edges; the rectrices are also edged with olive, which has almost disappeared with wear. The rectrices are narrower than in the adult, and the first primary is more rounded at the tip. The first year plumage is attained by an incomplete moult, wing and tail feathers being retained. This plumage differs from the adult, in addition to wing and tail differences, in having less spotting in the throat, in having a yellowish wash on the throat prominent or almost lacking and in having the feathers of the scapulars, back and rump white-tipped.

Philemon novaeguineae jobiensis
(Meyer)

Bernhard Camp: 1 ♂ ad., 7 ♀ ad., 1 ♀ imm.; April 16–May 4.

Cyclops Mountains: 5 sex?; March 25–November 6.

Hollandia: 4 ♂ ad., 1 ♂ imm., 2 ♀ ad., 1 ♀ imm.; June 25–July 1.

Found up to 50 meters altitude.

WING.—♂ ad. 148 mm., 150, 154, 156; ♀ ad. 142, 148, 148, 149, 149, 150, 151, 151.

These compare well with Jobi Island birds.

Dicaeum geelvinkianum centrale Rand

Dicaeum geelvinkianum centrale RAND, 1941, Amer. Mus. Novitates, No. 1102, p. 15—Balim River.

Balim River: 8 ♂ ad., 7 ♀ ad.; December 9–18.

Found at 1,600 meters altitude.

WING.—♂ ad. 56 mm., 57, 57, 58, 58, 59, 59; ♀ ad. 51, 51, 52, 52, 52, 53, 55.

This is a higher altitude, larger representative of *diversum*. It is interesting that though closest to *diversum* of north New Guinea, this series was taken on the drainage slope of south New Guinea, where the much lighter colored, as well as smaller, *setekwa* occurs in the lowlands.

Dicaeum geelvinkianum diversum
Rothschild and Hartert

Bernhard Camp, 4 km. southwest: 3 ♂ ad., 1 ♂ imm., 3 ♀ ad.; March 11–April 5.

Bernhard Camp: 2 ♂ ad., 2 ♀ ad., 1 ♀ imm.; March 21–28.

Cyclops Mountains: 1 ♂ ad.; April 22.

Hollandia: 2 ♂ ad.; June 29, July 2.

Found up to 850 meters altitude.

WING.—♂ ad. 49 mm., 50, 52, 52, 54, 55; ♀ ad. 46, 48, 48, 48, 49, 49.

I have already shown (1941, Amer. Mus. Novitates, No. 1102, p. 15) that the type of both *diversum* and *simillimum* falls within the range of variation of the Hollandia and Idenburg River birds. There is no increase in size with the increase of altitude in this series.

Melanocharis nigra unicolor Salvadori

Bernhard Camp, 6 km. southwest: 4 ♂, 2 ♀; February 20–March 3.

Bernhard Camp, 4 km. southwest: ♂, ♀; March 12–April 1.

Bernhard Camp: 7 ♂, 7 ♀; March 26–May 4.

Hollandia: 2 ♂, 2 ♀; July 4–November 28.

Found up to 1,200 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
1,200 meters	64 mm., 64, 64, 66	62, 64
850 "	61, 61, 62, 64, 64, 65	61, 62
Near sea level	58–63	60–65

The birds from higher altitudes average slightly larger than those from lower altitudes.

The males show no differences when compared with Jobi Island birds, as Stresemann and Paludan have shown (1932, Nov. Zool., XXXVIII, p. 224). I have no Jobi females for comparison.

This species was usually found solitary, low in the substage and undergrowth, but once at the 1,200-meter Camp I found numbers of them feeding on fruits high in a forest tree.

Melanocharis longicauda umbrosa Rand

Melanocharis longicauda umbrosa RAND, 1941, Amer. Mus. Novitates, No. 1102, p. 15—6 km. southwest of Bernhard Camp, Idenburg River.

Bernhard Camp, 6 km. southwest: 4 ♂ ad., 3 ♂ imm., 1 ♀ ad.; February 18–28.

Found at 1,200 meters altitude.

WING.—♂ ad. 62 mm., 62, 62, 66; ♂ imm. 60, 62, 62; ♀ ad. 61.

Most of these specimens were taken from a single tall forest tree, on the fruit of which they were feeding; the few others were found in the forest undergrowth.

Pristorhamphus versteri meeki

Rothschild and Hartert

Lake Habbema: 1 ♀; August 23.

Lake Habbema, 9 km. northeast: 4 ♂ ad., 5 ♂ imm., ♀; October 14–November 5.

Bele River Camp: ♂ ad., ♂ imm., ♀; November 11–December 1.

Balim River Camp: 1 ♂ imm.; December 17.

Bernhard Camp, 18 km. southwest: ♂ ad., ♀; February 4–8.

Bernhard Camp, 15 km. southwest: ♂ ad., ♀, ♀ nestling; January 9–27.

Found from 1,600 to 3,225 meters altitude.

WING MEASUREMENTS

Altitude	Male ad.	Female
3,225 meters		73 mm.
2,800 "	68, 68, 69, 69	70–74
2,200 "	64, 64, 66	71–73
2,150 "	61, 63	67–69
1,800 "	59, 62	65–68

There is a striking increase in size with increase of altitude. The males from high altitudes average slightly more white in the tail. Females from 2,800 meters are somewhat lighter green above than 1,800-meter females, but 2,200-meter females are more like the latter; thus on this character the most conspicuous break is between 2,200 and 2,800 meters, while in size the most conspicuous break is below that. It seems impractical to separate altitudinal races.

On the basis of color of the underparts and white in the tail and greenish gloss on the upperparts in the males, the series agrees with Weyland Mountains and Mt. Goliath birds. In the females the Weyland Mountains and Mt. Goliath birds are slightly more yellowish green above.

The measurements of Weyland Mountains birds are: ♂ 60–66 mm.; ♀ 67–70;

Mt. Goliath ♂ 60–62 (including the type of *meeki*).

This flowerpecker fed in the substage and commonly in low second growth. It was usually alone, and an active bird with quick movements. Three stomachs examined contained fruit. Birds with enlarged gonads were taken in October (1) and November (1).

Oreocharis arfaki (Meyer)

Habbema Lake, 9 km. northeast: 3 ♂ ad., 2 ♀ ad.; October 11–30.

Bernhard Camp, 15 to 18 km. southwest: 2 ♂ ad., 1 ♀ ad., 1 ♀ imm.; January 9–February 9.

Found from 1,800 to 2,800 meters altitude.

WING.—♂ ad. 69 mm., 70, 70, 71, 72; ♀ ad. 68, 71, 72.

There is no variation in wing length correlated with altitude, but the birds from lower altitudes have slightly smaller bills.

Males with enlarged testes were taken in October (1) and February (1).

Paramythia montium olivaceum

van Oort

Mt. Wilhelmina to 7 km. east: ♂, ♀; August 28–September 20.

Lake Habbema: ♂, ♀; August 2–31.

Lake Habbema, 9 km. northeast: 3 ♂, 3 ♀; October 14–25.

Bele River Camp: 3 ♂, 1 ♀; November 17–22.

Bernhard Camp, 18 km. southwest: 2 ♂, 4 ♀; January 23–February 8.

Found from 2,150 to 4,100 meters altitude.

WING MEASUREMENTS

Altitude	Male	Female
3,600–4,100 meters	115–123 mm.	112–120
3,225 "	114–121	108–119
2,800 "	115, 117	110–116
2,200 "	114, 115	111
2,150 "	107, 107	97, 103

This shows a correlation between increase in size and increase in altitude. The lower altitude birds besides being smaller average slightly more olive on the upperparts. A series from the Weyland Mountains is also small and averages slightly

more olive above than the present series. However, it is inadvisable to separate these populations as races.

Birds in breeding condition were taken in August (3) and September (1); nests were found August 9 (with one small young) and August 13 (with one egg). The nests were three and seven feet above the ground in the dense branches of very shrubby bushes on the forest edge. The description of one nest was: a deep, loose, untidy, cup-shaped structure supported on all sides by the dense twigs amongst which it was placed. The body of the nest was composed of a coarse, moss-like liverwort with some lichens and semi-woody stems throughout. There was a scanty lining of fine grass stems, rootlets and other semi-woody stems, and in the bottom of the nest was a pad 50 mm. deep of the chaff from the leaf bases of tree ferns. It measured outside 140 by 160 mm. deep; inside, 90 by 50 mm. deep. It contained one egg that was: shape ovate; gloss none; shell rough; ground color white with very small spots and dots of dark brown and secondary grays forming a wreath about the larger end, and sparingly scattered over the rest of the shell; size 29.5 by 21.2 mm. The single young in the other nest had abundant gray down on the upperparts and also on the ventral surface.

From some time spent watching at their nests I found that the female alone incubates. The male stays near the nest and accompanies her while she is off the nest. In fifty-two minutes of watching, the female brooded for four periods of two to seven minutes' duration and was absent from the nest for four periods of five to thirteen minutes' duration each. Both male and female fed the young.

***Zosterops fuscicapilla fuscicapilla*
Salvadori**

Bernhard Camp, 6 km. southwest: 3 ♂, 2 ♀; February 26, 28.

Balim River Camp: 8 ♂, ♀; December 9-18.

Bele River Camp: 2 ♂, 1 ♀; November 21, 22.

Found from 1,200 to 2,200 meters altitude.

WING.—♂ (10) 59-62 mm. (av. 60.5); ♀ (10) 58-62 (av. 60).

The females average duller, less yellowish than males.

The present series, compared with Arfak and Weyland Mountains birds, is slightly paler and less yellowish below, and slightly clearer green, less citrine above.

This was a common bird in the forest, often in flocks of considerable size, moving about in the tree tops. But in the Balim Valley it was common and characteristic of the second growth, shrubbery and even of small isolated shrubs in the grassland.

***Zosterops minor minor* Meyer**

Bernhard Camp, 4 km. southwest: 2 ♂, 1 ♀; March 11-17

Bernhard Camp, 6 km. southwest: 2 ♀; February 13-March 6.

Found at 850 and 1,200 meters altitude.

WING.—♂ 56 mm., 60; ♀ 56, 57, 58.

These birds average slightly greener above and have slightly blacker lores than Jobi Island birds, but the difference is too slight to be used in separating them.

A bird of the tree tops, often in small parties of its own kind or in mixed flocks. A March male and female had enlarged gonads.

***Erythrura trichroa sigillifera* De Vis**

Lake Habbema, 9 km. south: 4 ♂ ad., 1 ♂ imm., 2 ♀ ad., 4 ♀ imm.; October 18-November 7.

Bele River Camp: 1 ♀, 1 sex?; November 28.

Bernhard Camp, 6 km. southwest: 6 ♂, 1 ♀, 1 sex?; February 2-27.

Bernhard Camp, 4 km. southwest: 1 ♂; March 11.

Found from 850 to 2,800 meters altitude.

WING.—♂ (10) 60-65 mm. (av. 62.6); ♀ 61, 63, 64, 65.

The largest birds come from the highest altitudes, but the total size variation is small.

These birds compare well with a series from southeast New Guinea.

The immature birds are nestlings brought in by natives.

Birds in breeding condition were taken in February (2) and March (1).

Lonchura tristissima calaminoros

(Reichenow)

Bernhard Camp, 15 km. southwest: 1 ♀; January 28.

Bernhard Camp: 4 ♂, 2 ♀, 1 sex?; March 18-24.

Hollandia: 1 ♀, 2 sex?; July 13.

Found from sea level to 1,600 meters altitude.

WING.—♂ 48 mm., 49, 50, 50; ♀ 50, 50, 51, 52.

There is considerable variation in this series which is independent of age and sex.

Four Weyland Mountains males (*hypomelaena*) show little variation. One of the present males is as dark as the Weyland Mountains birds, and one Hollandia female is as dark as a Weyland Mountains female. For the rest of the series, they compare well with the darkest birds from the eastern part of north New Guinea.If more material from the Weyland Mountains shows that the species is as variable there as it is elsewhere in New Guinea, it may not be possible to recognize *hypomelaena*.

The examples from 1,600 meters altitude were taken along the edges of a small stream flowing through the forest, many miles from any grassland. The Bernhard Camp birds were found in small flocks in areas of floating marsh grass that were adjacent to forest. None of these was taken in grasslands, nor were there any grasslands near-by.

***Lonchura grandis heurni* Hartert**

Bernhard Camp: ♂ ad., ♂ imm., ♀ ad., ♀ imm.; March 18-April 29.

Found at 50 meters altitude.

WING.—♂ (10) 52-55 mm. (av. 54.1); ♀ 52-54.

A single specimen of *heurni* from Batavia-bivak I have for comparison falls within the range of variation of the present series.

This was a common bird of the floating grass mats of the Bernhard Camp lagoon, far from any grasslands. It fed on the seeds of the marsh grass and moved about in small flocks. Breeding birds were taken in March (10) and April (2); many nests were found in March, April and May. Some of the nests were solitary, placed in

shrubs standing in the water, some were on floating stumps and logs with projecting branches, floating in the marsh. On one such floating stump, projecting only a few feet above the water, were ten nests in use. The nests were the shape of lop-sided flasks lying on their sides. Some were composed externally of broad, dead, grass blades; inside, of fluffy inflorescent tips of grasses and ripe seed heads from which the seeds were gone; others had a considerable amount of rootlets from grasses used in their construction. One measured outside about 200 mm. long by 130 mm. wide by 160 mm. deep, with a nest chamber of 90 by 80 mm. across and an entrance 60 mm. long. Five and six were the usual number of eggs. They were: shape ovate; gloss slight; shell fairly smooth; color white; in size they varied from 15.5 by 11.3 to 17.0 by 11.5 and 16.5 by 12.4 mm. The young were completely naked, without natal down.

***Lonchura spectabilis mayri* (Hartert)**

Cyclops Mountains (near Sentani Lake): 6 sex? ad.; 2 sex? imm.; March 23-April 25.

Found near sea level.

WING.—ad. 45-49 mm.

These come from near the type locality.

Lonchura teerinki* RandLonchura teerinki* RAND, 1940, Amer. Mus. Novitates, No. 1072, p. 14—Bele River, 18 km. north of Lake Habbema, Snow Mountains.

Lake Habbema, 9 km. northeast: 2 ♂ ad., 1 ♀ imm.; November 6.

Bele River Camp: ♂ ad., ♂ imm., ♀ ad., ♀ imm.; November 9-24.

Balim River Camp: ♂ ad., ♂ imm., ♀ ad., ♀ imm.; December 9-18.

Found from 1,600 to 2,400 meters altitude; the specimens from 9 km. northeast of the Lake Habbema Camp were brought by natives, certainly from lower altitudes.

WING.—♂ ad. (10) 51-54 mm. (av. 51.9); ♀ ad. (10) 50-53 (av. 51.9).

This *Lonchura* was a common bird, usually found in flocks, in the Grand Valley, favoring especially the old fields grown up to weeds. Many of the November and

December birds were breeding, and young just out of the nest were collected.

Lonchura montana Junge

Mt. Wilhelmina to 7 km. east: ♂ ad., 2 ♂ imm., ♀ ad., ♀ imm.; August 30–September 29.

Lake Habbema: ♂ ad., ♂ imm., ♀ ad.; August 1–28.

Found from 3,225 to 3,800 meters altitude.

WING.—♂ ad. (10) 60–63 mm. (av. 61.7), ♂ imm. 62, 62, 63; ♀ ad. (10) 61–64 (av. 62.2), ♀ imm. 61.

This species was described in 1939 by Junge (Nova Guinea, [N.S.] III, p. 67) from a single female collected in the Oranje Mountains at 4,150 meters altitude in 1909, so this series is particularly welcome. The sexes are alike. As Junge has pointed out, this species is closest to *monticola*. The color and pattern are similar. The chief differences are: in *montana* only the anterior portion of the ear coverts is black; the breast is pale brown, this color extending onto the sides of the neck and the posterior part of the ear coverts; a small band of narrow, brownish black bars crosses the lower breast, and the barring continues down the flanks; the rectrices are slightly pointed and completely black. In *monticola* the ear coverts are all black; the breast is whitish, this color extending only onto the sides of the neck; a solid black bar crosses the lower breast and joins a series of large black blotches on the flanks; the rectrices are more pointed and edged with straw color. The bills and feet of the two species are very similar.

Though obviously closest to *monticola*, *montana* is best kept a separate species.

The immature birds are in first year plumage in which male and female are

similar. The forehead is blackish, shading to the brown of the crown, nape and back; the upper wing coverts like back but edged with pale brown; rump and upper tail coverts yellowish brown; remiges brownish black, edged externally with dark brown, on their inner edge with ochraceous; remiges black, more rounded at the tip than in the adult. On the underparts the chin is grayish, throat and breast grayish brown, abdomen and flanks buffy white; under wing coverts ochraceous; under tail coverts blackish, the feathers more or less tipped with buffy brown, as are the thighs.

Color of soft parts of adults: iris dark; bill grayish blue; feet slate.

This was a common species of the alpine grassland and edges of the shrubbery. It was usually found in parties of six to twenty in number. None of those collected was breeding.

Oreostruthus fuliginosus pallidus Rand

Oreostruthus fuliginosus pallidus RAND, 1940, Amer. Mus. Novitates, No. 1072, p. 14—Lake Habbema.

Mt. Wilhelmina, 7 km. east: 1 ♀ ad., 1 ♀ imm.; September 16, 19.

Lake Habbema: 1 ♂ [ad.], 1 ♀ imm.; August 5, 17.

Lake Habbema, 9 km. northeast: 2 ♀ ad.; October 19, 25.

Bele River Camp: 3 ♀ ad.; November 24–December 2.

Found from 2,700 to 3,600 meters altitude; the specimens from the Bele River Camp were brought in by natives, possibly from higher altitudes.

WING.—♂ 74 mm.; ♀ ad. 71, 71, 71, 73, 73, 74.

The discovery of this distinct race was the first record of the occurrence of this species in the Snow Mountains.

