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THE ADELBERT MOUNTAINS,
NEW GUINEA

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EXPEDITION

E. THOMAS GILLIARD AND MARY LECROY

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INTRODUCTION

THE BASIS OF THE PRESENT REPORT is a collection of 385 specimens of birds obtained by the late E. T. Gilliard and his wife in the Adelbert Mountains of northeastern New Guinea in March and April, 1959. At the time of Gilliard's death in January, 1965, parts of this report already existed in manuscript form. The junior author had been working in the laboratory with Gilliard on this report, and the present publication combines this manuscript and a short introduction written from field notes made by Gilliard.

HISTORY

The Adelbert Range is one of the isolated mountain ranges that lie to the north of the great lowland valleys of the Mamberamo, Sepik, Ramu, and Markham rivers. It is separated from the Bismarck and Schrader Mountains to the south by the Ramu River valley and from the similarly isolated ranges of the Huon Peninsula by the Gogol River and the lowlands around Astrolabe Bay.

In 1928 Rollo Beck collected in the area and discovered a new species of bower bird, *Sericulus bakeri*. However, it proved impossible to tell from Beck's labels or notes exactly where he had collected this new species; and, despite careful searching for it by several collectors in nearby areas, the Adelberts themselves had not been surveyed. It remained for the expedition herein reported to rediscover *Sericulus bakeri* and to fix its type locality with certainty.

In 1956 the senior author spent from June 14 to July 11 attempting to trace Beck's trail. Labels on Beck's specimens gave the locality only as "behind Madang," and Gilliard traversed the area around Madang (Agaru, Amele, Bafulu, Bauk, Kumaru, Mawan, Alexishafen, Rempi, Muru, Bagidi, Banab, Banik) and the Finisterre Mountain region (Bom, Bogadjim, Bauak, Bwai, Garbokob, Aiyau, Keku, Mt. Tyo) on foot in order to seek reports on the whereabouts of *Sericulus bakeri*. Being unable to find the bird in this area, he decided that it must have been obtained to the north in the Adelberts.

The situation was further complicated by the fact that "Madang" has not always been

situated at its present spot on the coast. Evidently in the early days of Australian trusteeship the name "Madang" referred to a large area of the coast surrounding the present village of Bogadjim (the early Australian government center and the former capital of Kaiser Wilhelmsland, Stephansort). Natives from Keku, Bom, Bogadjim, Jimjam, Bauak, Belaiya, Bwai, and other villages who went to work in coastal plantations were referred to as "Madang boys." After a few years the Australians left Bogadjim, and the name "Madang" was transferred to the village which is now the town of Madang. It was impossible for Gilliard to determine which "Madang" Beck had referred to on his labels, since the period when Beck was in the area was about the time the transition took place, and there was only an incomplete itinerary available of Beck's travels. Beck did, however, collect in the Finisterres, and it is possible that the Madang referred to by Beck was the village now referred to as Bogadjim.

In 1956 Gilliard met a native, Winini, who had been "shoot boy" for Beck. From him Gilliard learned that Mrs. Beck had accompanied her husband on the 1928 trip. Upon his return to New York, he learned that Mrs. Beck was still living in California. Correspondence followed in which Mrs. Beck confirmed that she and her husband had penetrated into the Adelberts, northwest of the present-day Madang, and had indeed obtained the new bower bird in this region.

Therefore, in 1959, the senior author and his wife undertook an ornithological survey of the southern, and highest, peak of the Adelberts, setting out from the present-day Madang and following roads and trails inland to Utu Mission Station and from there climbing to Maratambu and Memenga Forest on the summit. The long-searched-for bower bird was rediscovered in these summit forests, and several birds not present in Beck's collection were found.

ROUTES AND COLLECTING LOCALITIES

From Madang (see fig. 1) there is a fairly good road leading a short distance past Mawan to Agogoli Hill. Thence there is a good

ITINERARY OF ADELBERT MOUNTAIN EXPEDITION

February 24, 1959	Arrive Madang
March 2	Madang to Mawan
March 3	Mawan to Utu, Camp 1
March 4	Utu to Oronga, Camp 2
March 5	Oronga to Monasiri, Camp 3
March 6	Monasiri to Maratambu, Camp 4
March 6–April 14	Maratambu (Base Camp)
March 13	Maratambu to Mt. Memenga, Camp 5
March 13–April 3	Mt. Memenga camp
March 31	Maratambu to Wama (native hunters), Camp 6
March 31–April 11	Wama (native camp)
April 14	Maratambu to Oronga, Camp 2
April 18	Oronga to Utu, Camp 1
April 21	Utu to Mawan
April 22	Mawan to Madang

foot trail to Utu Catholic Mission, which is in charge of Father Bernard Johnson. This was the site of Camp 1 (altitude 250 feet). Nearby is the new village of Waralup, consisting of about 30 houses and a "house kiap." It is situated on the western side of the Waralup River, a very cold and swift-running stream about 12 feet wide. When Gilliard had visited Utu very briefly two days before setting up camp there, the Waralup River had been 4 feet higher than at the time the expedition reached it. A spring, which is the main water supply of the village of Waralup, is a five-minute walk from the village on the trail to Oronga.

On the trail between Waralup and Oronga the first village encountered is Gunasin, consisting of about 14 houses. It is also called Driwawa after a stream just west of the village. When the expedition passed, the stream was about 8 feet wide, shallow and swift, but with watermarks 4 feet high. It is part of the southern watershed drainage of the Adelbert Mountains.

From Gunasin, after about two hours of walking through tall, fairly level and dry forest, the expedition reached the Ninam River. At the time it was crossed it was 60 feet wide and 2 feet deep, but recent silt deposits indicated that only a few days before it had been at least 150 feet wide. Father Johnson of the Utu mission stated that the rains of the previous weekend had been the worst in four years so that the 150-foot width is probably nearly a maximum.

About 40 minutes from the Ninam River the trail began a braided course with the Yo-

mat River, a meandering forest stream; and the expedition made nine crossings of it.

Up to this point the trail had been to the northwest, just south of the outlying foothills of the Adelberts. Here the trail turned northward and left the floodplain to ascend a narrow, curving ridge on which Oronga is situated. The altitude of the village is 490 feet. It consisted of about 10 men, and all the inhabitants were friendly and helpful to the expedition; however, carriers for the next phase of the trip were difficult to obtain. Many of the men had left the village and, of those who remained, many were ill.

Just north of Oronga is the Oronga River, a stream of cold rushing water which varies from 10 to 60 feet in width. When the expedition was there it was about 15 feet wide and 1 foot deep, but evidence from great tree trunks and fresh sandbars indicates that it had been 60 feet wide and 6 feet deep within the preceding week.

The walk from Oronga to Monasiri took slightly less than five hours. The trail led up a steep slope to the northeast and then north to a sharp ridge with a splendid view to the east and west. There were some stands of bamboo on this ridge. It then dropped some 300 feet into a deep broad saddle where there were numerous pandanus palms, some very large trees, and patches of grass.

From here the trail led upward to Monasiri (2310 feet), situated in a bleak but spectacular spot on the edge of a crater-like valley which seems once to have been rimmed all around. The village of eight houses, very old with aged coconuts around it, is "perched

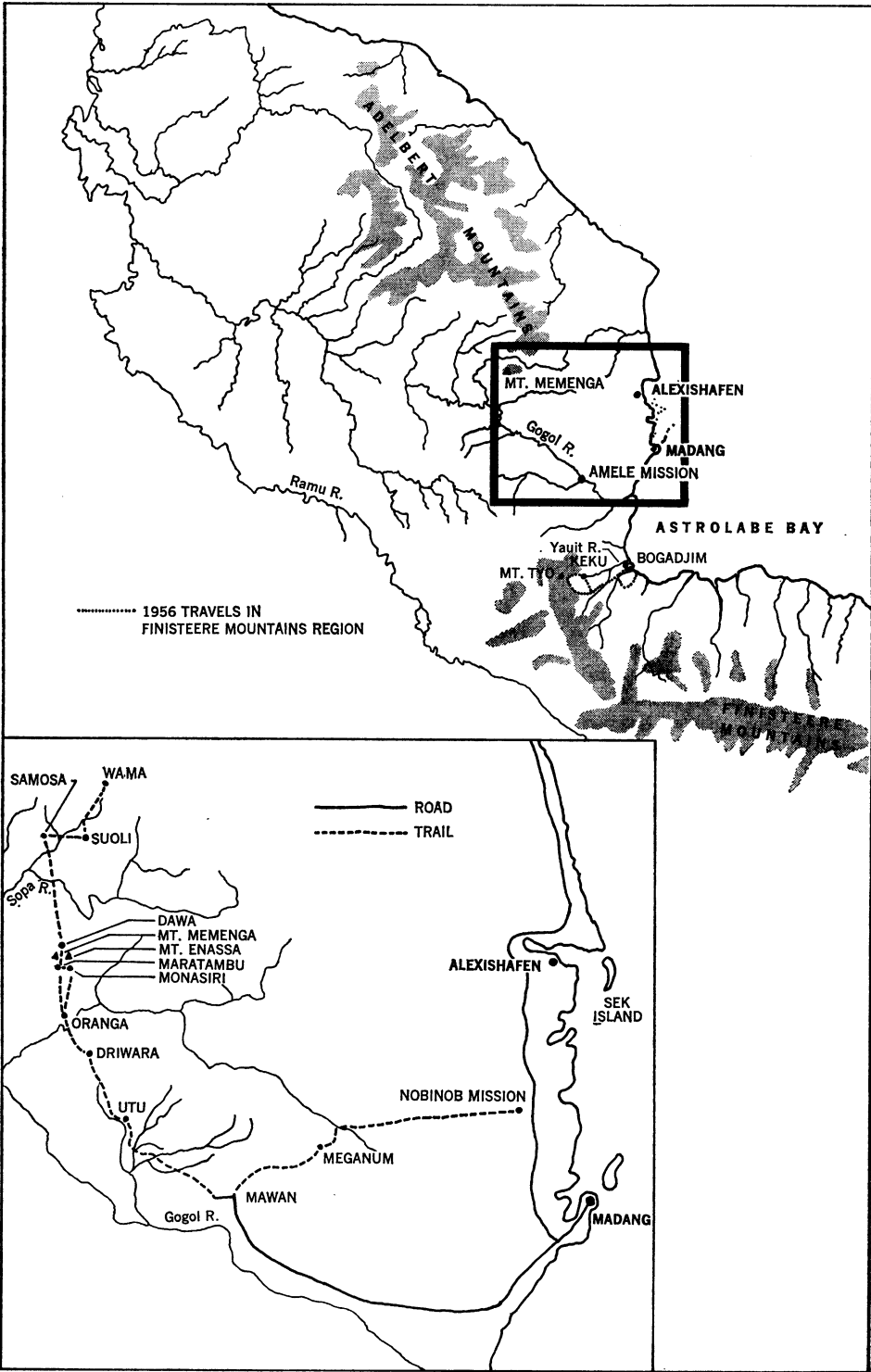


FIG. 1. Northeastern coast of New Guinea, showing the locality of the Finisterre and Adelbert Mountains. Inset: Area surveyed by the 1959 expedition.

like a disheveled tree house" on a grassy, rocky crag. All the forest has been removed from the knoll, and from the village one can see both the sea near Madang and the peaks of Mt. Wilhelm. The houses are poorly constructed, with the floors raised 2 to 4 feet off the ground and made of "pit pit" poles with wide cracks between. Because there is always a wind, the houses are often very cold, and the people and their pets huddle miserably around small fires. Sickness and failure to reproduce have depleted the population to a serious extent—a most depressing village.

The trail from Monasiri to Maratambu was very treacherous because of extensive landslides. Maratambu is almost due north across the crater-like valley from Monasiri and at approximately the same altitude. It was very difficult to obtain carriers from the small and lethargic population of Monasiri, and it was even necessary to employ some women.

From Monasiri the trail mounts a grassy knoll and then follows the top of a long, thin, naked ridge eastward. It then curves northward to a contoured trail which follows the inner slopes of the valley, going generally from east to northwest. During this time the trail dropped approximately 500 feet. At the bottom of the valley it angled upward again and into an area of landslides. The expedition crossed six of these (one was about 50 yards wide and 2000 feet deep and another 75 yards wide and 30 yards deep—a deep groove). After passing this zone the trail began its ascent to the village of Maratambu. Here the slopes were more gentle and the masses of broken trees less numerous.

The trail between these two villages was very well engineered. It was made by Father Novak in about 1925. (He was the same priest who pioneered trails to the Ramu River.) This trail made it possible to go back and forth from the headquarters of the Catholic missions on Sek Island, off the coast north of Madang, all the way to Maratambu by horse. The landslides which made sections of the trail all but impassable had occurred about six weeks previously and were the worst in the memory of the local inhabitants.

Maratambu Village has about 25 houses on the sides of a ridge surrounding a flat area.

All have a peculiar kind of tree-leaf roofing first seen at Oronga. The village is rather like a "ghost village." Eight men and women have died there in the past year, and most of the population has fled in fear of the "plague," which is a kind of pneumonia usually following severe malaria.

There is a good trail from Maratambu to the upper flats of Mt. Memenga, where a European had recently undertaken to grow coffee but had left and not returned.

The range above the villages of Monasiri and Maratambu is the highest of the Adelberts, but maps usually show it as higher than it actually is (6560 feet on some maps, but its actual height is somewhat under 5000 feet). The range has the unmanageable name of Bawanagamunga in the language of the Kare people who inhabit these villages. But there are three high points on this boomerang-shaped crest and they bear the following local names: to the west is Memenda, which is the lowest of the three; in the north middle is Memenga (the difference in names is very slight, as indicated), which is the highest peak in the Adelberts by about 500 feet; and to the east is Enassa, the second highest peak. All are heavily forested and abound in leeches and nettles. Enassa, in particular, is a sharp peak covered with tall original forest and connected to Memenga by a high forested ridge. The sides of this ridge are dangerously steep and show scars of many slides. Enassa belongs to the people of Monasiri, whereas Memenga belongs to the people of Maratambu.

The Gilliards did not go to Camp No. 6 at Wama Village. Collecting there was done by expedition hunters from Kanganaman Village on the Sepik River who had accompanied the Gilliards on numerous expeditions. In addition, Father Johnson of Utu Mission walked up to the village of Wama with the hunters. The following information concerning the trail is from information supplied by Father Johnson.

Departing from the Memenga Forest camp, Father Johnson reached the Sopa River in one hour (elevation 1250 feet). From here he crossed the Seira River and reached the village of Samosa (1950 feet) in about two hours. A walk of about five and one-half hours from Samosa brought the party to Suoli over an

up-and-down trail that at one point reached an altitude of 2200 feet. After passing Suoli, they recrossed the Seira River at 1800 feet. About an hour farther on they reached old Wama village (2950 feet) and in another 45 minutes, new Wama (3650 feet). At the time new Wama was in a freshly felled clearing in the forest with trees lying all around it. It was the highest village in the area, its new locality being some 450 feet higher than the village of Ukuriguma. The ridge upon which the new village of Wama was situated was called Nawawu. A nearby ridge was 4150 feet in altitude, and one to the north was probably some 400 feet higher.

The return trip to the coast followed the same route as the entry except between Maratambu and Oronga. The trail out was an extremely difficult one going down nearly 1000 feet and back up to an altitude higher than that of Maratambu and continuing this up-and-down course until it finally descended to the Oronga River and Oronga village. Throughout the length of the trail there was much grassland and second-growth forest, indicating former extensive cultivation. In the draws, however, and on sharp jagged ridges the forest was thickly luxuriant and original. The trail for much of the distance was an old contoured trail which had been carefully engineered, but slides had in places made passage very difficult. In fact, the slides began at the contoured track, and it is possible that cutting into the side of the mountain allows water to seep in and weaken the ground below the cut.

RESULTS OF THE EXPEDITION

A total of 385 specimens of birds were obtained, of some 130 species. A list of species represented by specimens in alcohol will be found in the Appendix.

In addition to the birds, small collections of mammals and reptiles were obtained and have been turned over to the appropriate departments at the American Museum for study. The mammals were collected by Margaret Gilliard, and in many cases the specimens were accompanied by detailed drawings of the animal in the flesh. Hobart M. Van Deusen, Assistant Curator, Archbold Collections, informs us that 26 specimens were collected (either skin and skull or pick-

led) of eight species (three bats, four marsupials, and one rodent).

Many photographs and films were made, including photographs of a captive female of *Sericulus bakeri*.

All specimens collected by the expedition are deposited in the American Museum except one specimen of each species of bird, which has been deposited with the Department of Agriculture, Stock, and Fisheries, Port Moresby, in accordance with collecting permits issued to the expedition by the Department of Customs of Papua and the Territory of New Guinea.

ACKNOWLEDGMENTS

Many courtesies were extended to the Gilliards during their stay in the Adelberts. Special thanks are due to Mr. Les Williams, District Commissioner at Madang, and the numerous Madang residents who were helpful in various ways and to Mr. and Mrs. Mick Lane at Mawan. Father Bernard Johnson of the mission station at Utu accompanied the expedition in the field. His assistance in many aspects of the work was much appreciated. It was he who accompanied native hunters to Wama Village and sent back notes on the area to the expedition camp in Memenga Forest.

Once again, as on several previous expeditions, Rambur, Mava, Bowie, and Tesako, native hunters from the village of Kangana-man on the Sepik River, accompanied the Gilliards. Their hunting expertise, their ability to converse with local natives, and their complete reliability made them invaluable to the expedition.

Financial assistance from the National Geographic Society, the Explorers Club, and the American Museum of Natural History are gratefully acknowledged.

In the preparation of this manuscript for publication after Gilliard's death, Dr. Dean Amadon has given generously of his time and has made many very helpful suggestions. The junior author very much appreciates his assistance. She is also grateful to Mrs. Gilliard for reading the Introduction and offering suggestions, and to Mr. Hobart M. Van Deusen, Assistant Curator, Archbold Collections, for information he supplied concerning the mammals collected. Dr. Jared

Diamond very generously shared his knowledge of the New Guinea avifauna; Dr. G. Mauersberger, Zoologisches Museum, Berlin, kindly sent information on specimens of *Eupetes castanonotus* in his institution; and Dr.

G. O. Evans of the British Museum (Natural History) supplied identifications of ectoparasites from a cassowary chick. Thanks are also due to Mrs. Margaret Hanson, who prepared the manuscript for the editor.

ANNOTATED LIST OF BIRDS

VERNACULAR ENGLISH NAMES given for each species follow Rand and Gilliard (1967) in most cases; native names follow after a semicolon. All measurements are in millimeters and weights are in grams. The names of species observed but not collected are enclosed in brackets. A complete list of species for which we have pickled specimens will be found in the Appendix.

Plates 9 through 14 are paintings of birds made in the flesh by Margaret Gilliard in the Adelbert Mountains.

Casuarus unappendiculatus philipi Rothschild
SINGLE-WATTLED CASSOWARY

Oronga.

Only the head (with neck and single wattle), leg, and wings of this specimen were saved. Bill length from anterior edge of casque, 38; tarsus, 166.

This large chick with a single neck wattle was collected while in company with a wild adult in the tropical rain forest near Oronga. It had the spines of the wing filamented and the tip of the wing with a distinct hooked claw. The adult, according to Tesako, had white, blue, and red on its head and a single wattle. Judged from the number of cassowary tracks to be seen in the forest and the prevalence of tame cassowaries living in native villages, these ratites are common in the Adelbert Mountain region.

Ectoparasites were collected from this chick, and G. O. Evans of the British Museum (Natural History) informs us that two species are represented: *Megninia* sp. (Analgesidae, feather mites) and *Eutrombicula* sp. near *hirsti* (Sambon) (Trombiculidae, chiggers).

Dendrocygna guttata Schlegel
SPOTTED TREE DUCK

One specimen was obtained near Utu.

Henicopernis longicauda longicauda (Garnot)
LONG-TAILED BUZZARD

Memenga Forest.

Wing: Male, 409.

Iris golden amber; bill grayish white, the maxilla more sooty gray, with the culmen and tip narrowly blackish, the mandible with

a pinkish cast; feet and legs grayish white, with blackish nails; cere and skin around eye pale lead gray.

The only specimen that the expedition encountered was collected as it perched alone in the canopy of thick rain forest crowning a sharp ridge near a native garden clearing. Earlier it had been observed perching on a thick midlimb of a large solitary tree growing in the native garden. Nearby on similar trees a large concentration of *Artamus maximus* constantly perched and soared in and out. Gilliard had watched this Long-tailed Buzzard as it flew about in company with a Brahminy Kite (*Haliastur indus*): "I noticed this huge-tailed hawk first as it soared half a mile distant and some 500 feet below the ridge top on which I stood. It rose rapidly without flapping of wings, and when at my elevation, rapidly glided across the ridge in one long, straight glide. It soon returned to wheel in large circles and each time it came around I was impressed with the deeply 'fingered' rounded wings with their vivid rows of spots, also the immensity and flexibility of the tail, which is constantly tilted in flight. The tilts are so acute, in fact, that at times the tail was set almost at right angles to the wings. The head, which seemed relatively small, was constantly turned from side to side in flight."

Haliastur indus girrenera (Vieillot)

BRAHMINY KITE; TUGUMALA

Utu; Maratambu.

Weights: Females, 394 (subadult), 434, 466.

Not uncommon, this species is occasionally found soaring alone, in pairs, or in company with other hawks over ridges and gorges of the Adelbert region far from water. It is also occasionally seen near native gardens, particularly during the fire season. The stomach of one contained remains of many long-legged insects.

Accipiter novaehollandiae leucosomus (Sharpe)

GRAY OR WHITE GOSHAWK

Maratambu.

Wing: Male, 220. Weight: 258.

The white phase of this fairly common species seems to be uncommon in the Adelbert Mountain region. This white specimen was found perching in a tall breadfruit tree in a native garden. Its stomach held two small lizards.

***Hieraaetus morphnoides weiskei* (Reichenow)**

LITTLE EAGLE

Maratambu.

Wing: Male, 281.

Iris dark amber brown; bill dark gray, with blackish tips; cere blue-gray, with a greenish cast; skin of lores and eye ring gray; feet pale gray, with a greenish wash.

Our only record is of this specimen which was found under attack by crows as it perched 40 feet up in a large tree in a native garden.

***Falco peregrinus ernesti* Sharpe**

PEREGRINE FALCON

Memenga Forest.

Very uncommon in the Adelbert Mountain region. The only Peregrine Falcon that was encountered by the expedition was a female which Gilliard watched for many minutes before he collected it. It was perched 60 feet up on a thick, horizontal limb of a dead tree in the edge of a native forest garden. It held a pigeon-sized green bird in its talons and suffered an attack from *Falco severus* (see that species) as he watched.

***Falco severus papuanus* Meyer and Wigglesworth**

ORIENTAL HOBBY; AGRIPICI

Memenga Forest.

Not uncommon, this species was chiefly encountered in and around native gardens where this specimen was observed perching for long periods on high dead limbs a few hundred feet from a large concentration of wood swallows (*Artamus maximus*). Once Gilliard observed this small falcon as it dived from behind at *Falco peregrinus ernesti* as the latter perched 60 feet up feeding on a pigeon-sized bird. As it passed within a yard or less of the Peregrine Falcon, the latter flipped open its wings and emitted an explosive screech, but it did not leave its perch or drop its prey.

***Megapodius freycinet affinis* Meyer**

COMMON SCRUB HEN; KINJOW

Two eggs were found 14–16 inches down in the top of a low nest mound measuring about 18 by 20 feet, situated on nearly flat ground in tall original forest at the edge of Utu Village. The mound, which was lukewarm to the touch, was 120 feet from a large forest stream.

The following quotation from Gilliard's field notes is of interest concerning this species:

"From Kanari, the Luluai of Oronga Village, I learned much regarding the importance of megapodes in the economy of the villagers. For centuries they have systematically cropped the wild population for eggs and young, and they have done it so carefully that today in the Memenga forests as well as all along the Sepik, this species is common to abundant, even in the very outskirts of the villages.

"Kanari, who owns the mound described above, gave me the following history of it: The mound is about 13 years old. Unlike *Talegalla jobiensis* in which, he said, the mound is always built and maintained by a single pair of birds, the mounds of *Megapodius freycinet* are often occupied by a number of birds. However, the mound is always started by a single pair of birds. With the passing of years he said, some of the female offspring of the original pair return to lay in the mound. Thus, often there will be two pairs, sometimes three, rarely four, at a single mound. Kanari's mound is occupied by two pairs at the present time. Eggs are deposited at all periods of the year. Kanari claims to have cropped some 28 eggs and chicks in the year just past."

***Talegalla jobiensis jobiensis* Meyer**

BROWN-COLLARED BRUSH TURKEY; NYONGA

Two eggs belonging to this species were obtained by the expedition. Egg 1 was found in a mound of vegetation situated on a sharp ridge of Mt. Enassa under tall, thickly mossed rain forest. It weighed 186 grams and measured 93 by 59 mm. The embryo that it contained was approximately 20 days old and weighed 15 grams.

Egg 2 was taken from a mound on a hill near Oronga village. It weighed 205 grams and measured 97.5 by 61.5 mm. The embryo weighed 108 grams, had a well-developed egg tooth, and was nearly ready to hatch. It moved strongly, shifting the head and making slight leg movements, and had its eyes wide open, closing them when handled.

According to Oronga village natives, this species is fairly common. It is said to build a nest mound on flat ground beneath tall rain-forest trees and to occupy the mound for from three to five years. The natives believe that each mound is owned by a single pair of birds, and that the pair usually visits the mound to "straighten" it each morning throughout the year. The eggs, they believe, may be deposited in any month of the year, and the eggs are always placed on end. The young hatch in from two and three "moons" time. After hatching, the chicks stay in the mounds, sometimes for several days, and are often found entrapped among the eggshells by natives intent on cropping the mound for eggs or young. The adults, according to native lore, call as they approach the mound. If young are entrapped in it they answer with an "is-is-is-is" note in a rapid, hissing manner. When this is heard, also according to native informants, the adults immediately cut a tunnel into the mound and liberate the chick. In view of what is known of other megapodes, notably *Leipoa*, much of this native lore is probably erroneous.

This megapode is one of two species that are economically important to the local natives. All mounds, as soon as they are discovered, are immediately marked with the ownership symbol of the discoverer (usually by crossing saplings ringed the mound and placing a tambu mark of crossed sticks on the ground). Mound ownership is carefully honored, and the mound owner then systematically takes eggs and young from this mound. Adult birds are never killed. By careful questioning of one mound owner, Gilliard estimated that he obtained a yield of about 15-17 eggs and young from one mound in one year.

See Clark (1960, 1964a, 1964b) for information on the ontogeny of this species.

***Amaurornis olivaceus moluccanus* Wallace**

RUFIOUS-TAILED MOORHEN OR GALLINULE;
KIKOKIKO

Utu.

Although this species is regarded by Adelbert Mountain people as a fairly common resident of swampy places (both in the grasslands and woodlands) it was never seen by members of the expedition. Our one specimen was shot by a native hunter in tall swampy grassland near a stream. The stomach contents were shrimplike insects and a large caterpillar.

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

SUPERB FRUIT DOVE

Our only record is of a male found feeding in the ridge forest at Memenga.

***Ptilinopus pulchellus decorus* Madarász**

BEAUTIFUL FRUIT DOVE

Our one specimen, a male, was obtained in Memenga Forest.

***Ptilinopus iozonus jobiensis* Schlegel**

ORANGE-BELLIED FRUIT DOVE; MASAWAKI

Oronga; Memenga Forest.

Weights: Male, 115; female, 118.

Iris yellow to orange, eye ring dark gray, cere olive.

***Megaloprepria magnifica septentrionalis* Meyer**

MAGNIFICENT FRUIT DOVE

Oronga.

Weight: 185.

This specimen had the ovary very much enlarged.

***Ducula pinon jobiensis* (Schlegel)**

PINON IMPERIAL PIGEON

Maratambu.

Testes enlarged.

Ducula rufigaster uropygialis

Stresemann and Paludan

PURPLE-TAILED IMPERIAL PIGEON

Oronga.

Weight: Male, 451.

Iris red, with broad, wine-colored rim; eye ring and skin near eye rose.

***Ducula zoeae* (Lesson)**

ZOE IMPERIAL PIGEON

Our only specimen was collected above Maratambu.

***Gymnophaps albertisii albertisii* Salvadori**

MOUNTAIN PIGEON; WASWASA

Maratambu; Memenga Forest.

Weights: Male, 273; female, 241.

Iris mottled red-orange (male), red-orange, with inner ring of pale yellow (female); gonads much enlarged.

This species is by no means common in the forests surveyed by the expedition, but occasionally flocks were encountered in steep, tall, hill forest. One that Gilliard observed closely on March 11 consisted of about 10 birds which kept together in a tight group in the topmost limbs. When one was shot, the others moved only a short distance before settling down, apparently to feed.

***Macropygia amboinensis kerstingi* Reichenow**

AMBOINA CUCKOO-DOVE; EMGUSA

Maratambu.

Weights: Male, 146; female, 135.

These specimens are slightly darker above than typical *kerstingi*.

This is a common species of the mountain forest and forest edge where it is usually found solitary or in pairs perching in the middle limbs. The female was one of a pair found perching 35 feet up in vines in the edge of a native hill garden. It had an egg about ready for laying.

***Reinwardtoena reinwardtsi griseotincta* Hartert**

GREAT CUCKOO-DOVE

Our only specimen is preserved in alcohol. It was one of a flock of about 10 observed feeding in the forest crown above Maratambu.

***Chalcophaps stephani stephani* Pucheran**

STEPHAN'S GROUND DOVE

Memenga Forest.

Weights: Males, 122, 140.

***Gallicolumba jobiensis jobiensis* (Meyer)**

WHITE-BREASTED GROUND DOVE

Oronga; Maratambu; Memenga Forest.

Weights: Male, 144; females, 132, 151.

This species is fairly common. One which was flushed from the ground in the second growth of an abandoned garden flew a short distance to perch on a low tree limb.

***Otidiphaps nobilis cervicalis* Ramsay**

MAGNIFICENT GROUND PIGEON; MOOMA

Memenga Forest.

The Magnificent Ground Pigeon was rather common in the Memenga forests but very shy and retiring. One of the two specimens collected by the expedition was a female shot while on a nest containing one egg. The egg was broken but measured approximately 44 by 31 mm. The body of one specimen was saved in formalin.

***Goura victoria beccarii* Salvadori**

VICTORIA CROWNED PIGEON

Oronga.

According to native lore, this species is still fairly common in the lowland swamp forests at the southern foot of the Adelbert Mountains.

***Pseudeos fuscata incondita* (Meyer)**

DUSKY-ORANGE LORY

Nawawu; Memenga Forest.

Weights: Males, 170, 181; female, 172.

Iris bright red (males), orange (female); bill orange; feet, cere, and eye ring black; skin at base of bill orange. The subadult male differs from the adults by having the iris pale yellow and the bill dark brown speckled with deep gold.

Trichoglossus haematodus intermedius

Rothschild and Hartert

RAINBOW LORY

Memenga Forest.

Weight: Male, 172.

***Charmosyna placensis subplacensis* (Sclater)**

YELLOW-FRONTED BLUE-EARED LORY

Maratambu; Memenga Forest.

Our specimen was one of a pair(?) that visited a flowering tree in the edge of a native garden in company with several species of *Myzomela*.

***Micropsitta pusio beccarii* (Salvadori)**

BUFFY-FACED PYGMY PARROT; NIMUKA

Maratambu.

Uncommon. Our only specimen was one of

a small party found in the upper limbs of a forest-edge tree.

Probosciger aterrimus stenolophus (van Oort)

PALM COCKATOO

Plate 9

Oronga; Nawawu.

This species is fairly common but thinly distributed. Sometimes it is remarkably confiding, as, for example, in the Astrolabe Bay area near Bogadjim, where the senior author once encountered a lone adult as it perched quietly about 35 feet up in high rain forest pulling with its bill at a large woody object held handlike in its left foot. It was so busily engaged in eating that shouts only caused it to turn its head briefly, revealing its long, stringy, blue-black crest.

[Cacatua galerita triton Temminck]

SULPHUR-CRESTED COCKATOO

The following observations are from Gilliard's notes for March 7, above Monasiri:

"Very common. Usually occurs in flocks but often is seen in pairs flying over the forest, especially in morning and evening. One flock of nine was observed at 3000 feet as it wheeled out from the forested slope, turned and then split into two groups that landed in naked canopies 100 yards apart. A single white bird was seen flying against a green wall of foliage at least a mile away.

"Cockatoos are abundant in the summit forests. Certain trees seem to be their base of operations with the cockatoos screaming around them, diving at each other, circling away after a shot and returning noisily. Apparently their cry rivals their crest, both being [perhaps] designed to frighten predators."

Psitttrichas fulgidus (Lesson)

VULTURINE PARROT

Kulu.

Larius roratus pectoralis (Müller)

RED-SIDED ECLECTUS PARROT; KALAGA

Maratambu.

Wing: Male, 253.

Geoffroyus geoffroyi minor Neumann

RED-CHEEKED PARROT

Utu.

Wing: Male, 163. Weight: 146.

Chalcites meyerii (Salvadori)

MEYER'S BRONZE CUCKOO

Nawawu.

Weight: Male, 15.

One bird was trapped on a nest of unknown identity built in the crotch of a tree and decorated with living moss.

Centropus menbeki menbeki Lesson

GREATER COUCAL

Maratambu.

Podargus papuensis Quoy and Gaimard

GREAT PAPUAN FROGMOUTH

Mawan.

Podargus ocellatus ocellatus Quoy and Gaimard

LITTLE PAPUAN FROGMOUTH

Maratambu.

Weight: Male, 150.

This specimen was shot at 10 P.M. in a native garden at the edge of second-growth hill forest. It was perched on a dead banana frond about 8 feet up.

Hemiprocne mystacea mystacea (Lesson)

MOUSTACHED SWIFT

Below Suoli, Sopa River.

Weight: Female, 79.

Ceyx lepidus solitarius Temminck

DWARF KINGFISHER

Maratambu.

Weight: Male, 16.

This bird was discovered sitting quietly and alone about 25 feet up in the upper part of fairly thick old garden forest.

Dacelo gaudichaud Quoy and Gaimard

RUFIOUS-BELLIED GIANT KINGFISHER

Memenga Forest.

Weight: Male, 138.

Halcyon torotoro torotoro (Lesson)

LESSER YELLOW-BILLED KINGFISHER;

YASASENGAVA

Maratambu.

A female was in breeding condition, with several ova almost ready for laying.

Stomach contents consisted of the remains of insects and a large, leathery white egg with the remains of a vertebrate within.

***Halcyon nigrocyanea quadricolor* (Oustalet)**

BLUE-BLACK KINGFISHER

Oronga.

Our two specimens, an adult and a sub-adult male, were together about 6 feet up in the substage of dark semi-flooded forest, not near a stream.

***Tanysiptera galatea meyeri* Salvadori**

COMMON PARADISE KINGFISHER

Oronga.

Weight: Female, 69.

***Tanysiptera nympha* Gray**PINK-BREASTED PARADISE KINGFISHER;
YA-SAY-TANGAWA

Maratambu.

Wing: Male, 93; female, 92. Weights: 57, 57.

These Maratambu birds are much more reddish apricot on the chest, abdomen, and lower back than all specimens in the American Museum except one collected by L. and S. Quate in the Kebar Valley, Vogelkop, in 1962. This is an immature bird, molting into adult plumage. It has the lower back as red as in our specimens and splotches of the same red on the abdomen. One female from Sattelberg, collected in 1924, approaches our birds in abdomen color but is lighter on the lower back. Other specimens were all collected prior to 1929 and have much less intense reddish coloration (pinkish tan to pinkish apricot). Thus, it seems probable that this rare kingfisher fades considerably in collections, but additional specimens are needed before individual or seasonal variation can be ruled out.

One bird, collected at Etna Bay in 1896, is lighter on the abdomen than all the others. The color is pinkish beige, with a well-marked ochraceous band across the upper chest. Another specimen (locality, northwest New Guinea) is only very slightly darker on the abdomen and has traces of the same ochraceous collar. It seems very unlikely that these specimens have faded in this manner, but just what their position is must await further collection.

There is also variation in the amount of black on the side of the head. Birds from the Huon Peninsula and the Adelbert Mountains

seem to have more black, with the feathers growing from the base of the mandible black. Birds from the Vogelkop invariably seem to have the feathers growing from the base of the mandible of the same color as the throat, except the two specimens mentioned in the preceding paragraph in which there is a stripe of ochraceous feathers, starting at the base of the mandible and separating the lighter tan of the throat from the black of the lores.

From the foregoing discussion it can be seen that there is much variation within the species *Tanysiptera nympha*, which is not surprising considering its disjunct range. Owing to the scant material available and the probability of color changes with age, however, it seems inadvisable to separate any subspecies at this time. This record constitutes an extension westward, in the eastern part of the range, from the Huon Peninsula to the Adelbert Mountains.

***Merops ornatus* Latham**

RAINBOW BEE-EATER

Oronga; Maratambu; Memenga Forest.
Weights: 27-29.5.

***Eurystomus orientalis pacificus* (Latham)**

BROAD-BILLED ROLLER

Utu.

Weight: Females, 134, 134.

***[Aceros plicatus jungei* (Mayr)]**

PAPUAN HORNBILL

Abundant.

***Pitta erythrogaster habenichti* Finsch**

BLUE-BREASTED PITTA; OKATARI

Maratambu.

Weight: Male, 82.

Our specimen was captured on its nest on the ground at the base of a tree in the forest. The nest and two eggs were also collected. The nest itself was composed of dead leaves, small dead vines and rootlets, and some dry grass stems; about 10 dead sticks the size of a pencil (4 to 8 inches) were used as a foundation. A number of live green ferns and many skeletonized large leaves formed the awning and roof. The nest cavity was lined with a mat of black, hairlike strands from the inner surface of the limbum palm.

The eggs are a wide oval (one measured 22.8 by 28.2), whitish, with irregular blotches of vinaceous gray-brown, sparse on the smaller, and becoming profuse on the larger, end.

***Pitta sordida novaeguineae* Müller and Schlegel**
BLACK-HEADED PITTA

Maratambu.

Weight: Female, 70.

This species is seldom observed, but its call, a clear whistle of several phrases, is heard fairly frequently.

Our single specimen was shot in the sub-stage of original mountain rain forest. It flushed twice, flying each time a short distance close over the ground. The second time it alighted, it ran on the ground in front of the hunter, then mounted a log and was shot. It was silent and solitary.

***Hirundo tahitica frontalis* Quoy and Gaimard**
PACIFIC SWALLOW

Utu.

Weight: Male, 13.

***Lalage atrovirens atrovirens* (Gray)**
BLACK-BROWED TRILLER

Utu.

Weight: Male, 31.5.

***Coracina melaena melaena* (Lesson)**
BLACK GREYBIRD

Utu; Oronga.

Weight: 50.

The Oranga specimen was one of a small flock of greybirds that worked noisily through the lower and middle tier of the forest.

***Coracina morio incerta* (Meyer)**
MÜLLER'S GREYBIRD

Maratambu; Memenga Forest; Kulu.

Weights: 57, 61, 67.

A subadult specimen had a lead gray bill.

***Coracina lineata axillaris* (Salvadori)**
BARRED GREYBIRD

Maratambu; Memenga Forest.

Weights: Male, 75; females, 68, 72.

***Coracina caeruleogrisea* subsp.?**
STOUT-BILLED GREYBIRD

Maratambu; Memenga Forest.

Wing: Males, 171-174; females, 162, 163.

Weights: Males, 146, 148, 170; females, 132, 135.

One female had the ovary much enlarged, with several ova quite large; one male had enlarged testes.

These birds are intermediate between *strenua* and *adamsoni*. The under wing coverts and axillaries vary from pale to deep ochraceous, and the wing, though perhaps slightly closer to that of *strenua*, is intermediate in size.

One specimen was shot from a small limb in the upper middle tier of original forest; it was one of two seen together. The stomach was filled with very hard amber and green insect skeletons and long transparent wings, all apparently the remains of one or two large cicadas.

***Crateroscelis murina murina* (Sclater)**

LOWLAND MOUSE-BABBLER; SOLNANDA

Maratambu; Memenga Forest.

Weights: Males, 15.5, 16.5; females, 14, 16.

An immature specimen had the mandible, as well as the maxilla, black.

***Eupetes castanonotus burgersi* Mayr**

MID-MOUNTAIN EUPETES

Plate 10

Memenga Forest: One male. Nawawu: Two males, one female, one [male], one [female].

Wing: Males, 94, 95, 99; female, 91. Weights: Males, 71, 72, 74; female, 66.

Our specimens are from the area between the ranges of *burgersi* (Sepik Mountains) and *par* (Saruwaged Mountains). The American Museum has no topotypical material of either subspecies, and Dr. G. Mauersberger of the Zoologisches Museum in Berlin very kindly compared female specimens of both *par* and *burgersi* with *Eupetes c. castanonotus* in the Berlin Museum collection. He found that *par* females are, as Mayr (1931, p. 690) said, a brighter chestnut color on the upper back than the nominate race. Three females of *burgersi* at his disposal were intermediate between *par* and *castanonotus* in color of the upper back. Our females were compared with *castanonotus* and found to be somewhat brighter on the upper back.

Meise (1930, p. 17) in his original descrip-

tion of *par*, wrote that the wing in *par* is longer than that in *saturatus* [which at that time included Sepik specimens later named *burgersi* (Mayr, 1931, p. 691)]. He gave the following wing measurements: *saturatus* (including *burgersi*), males, 91, 93, 95, female, 91; *par*, males, 101, 101, females, 98, 99 (type). Mayr (1931) gave the following measurements for *par*: males, 101, 102, females 97, 97.

Our specimens are obviously smaller than *par*, and, since the females are only slightly brighter than those of *E. c. castanonotus*, we are including them in the subspecies *burgersi*. Specimens collected at Keku in the foothills of the western Finisterres by R. Beck in 1928 agree quite well with our birds. There may prove to be a cline of increasing wing length and increasing brightness of the upper back in females from the Sepik Mountains through the Adelberts and Finisterres to the Saruwaged Mountains, but only additional material and direct comparisons of specimens of all the populations involved will give a final answer.

This species was found moving about on the ground or on fallen limbs in tall original moss forest. One of the natives in the village of new Wama was able to attract the birds by giving a plaintive, medium-pitched whistle composed of notes that were long and drawn out at first and then shorter and more rapid. He heard the bird's call first and then duplicated it. Quickly four birds appeared, running on the ground, but without calling again. When two were shot, the other two ran on the ground to escape, but did not go far, for they were easily recalled by the native whistle.

***Eupetes caerulescens geislerorum* Meyer**

LOWLAND EUPETES

This most interesting specimen was shot at 4000 feet in Memenga Forest above Maratambu. Unfortunately it was so badly mangled that it could only be preserved in alcohol. It is definitely the Lowland Eupetes and, even more unexpectedly, it is of the subspecies *geislerorum*, heretofore not known north of the Huon Peninsula. The Lowland Eupetes found around Astrolabe Bay is *E. caerulescens neumanni*, in which the male and female are similar. The race from the Huon Peninsula has the female mostly brown.

The following description is taken from the notes made by Gilliard from the fresh specimen:

"Upperparts brownish olive, becoming dark and rich chestnut on rump (the latter is fluffy and underlaid with dark gray feather bases); a superciliary of buffy brown over the eye from the lores to the nape (this is a narrow stripe), and a broad, sharply marked mask of black from the lores to the middle of the long (almost rail-like) neck; the throat to the middle of the long neck immaculate white, contrasting vividly with the broad black mask and neck stripe; underparts from the middle neck apparently all rich reddish brown (the white of the neck and the brown of the underparts may be divided by a thin black band); tail above and below deep chestnut brown and relatively short; wide wings with the outer primaries (at least) sooty brown with olive outer edges."

This description seems to fit the female of *geislerorum* exactly, but it would not be surprising to find differences between the isolated population in the Adelberts and the Huon Peninsula birds when skins are available for comparison.

The native who shot this specimen said that two of these birds (he did not mention any differences in color) flew up from the floor of very thick mountain forest when he fired at another bird. One flew to a vine 40 feet away and the other landed on a vine 25 feet away and 3 feet up, where it was shot at close range.

The stomach contained a mash of insect matter, including what was probably shiny black ant heads.

***Pomatostomus isidori calidus* (Rothschild)**

RUFIOUS BABBLER; SINAAWU

Oronga.

Weight: Female, 76.

A native hunter shot our only specimen from a flock of eight to 10 of these peculiar babblers. The birds were in a noisy group 8 to 20 feet up in tall open forest of the floodplain.

In the Finisterre Mountains in 1956, Gilliard (1958) found a remarkable pensile nest identified as belonging to this species. Native informants reported at that time that the nests were used as communal sleeping nests.

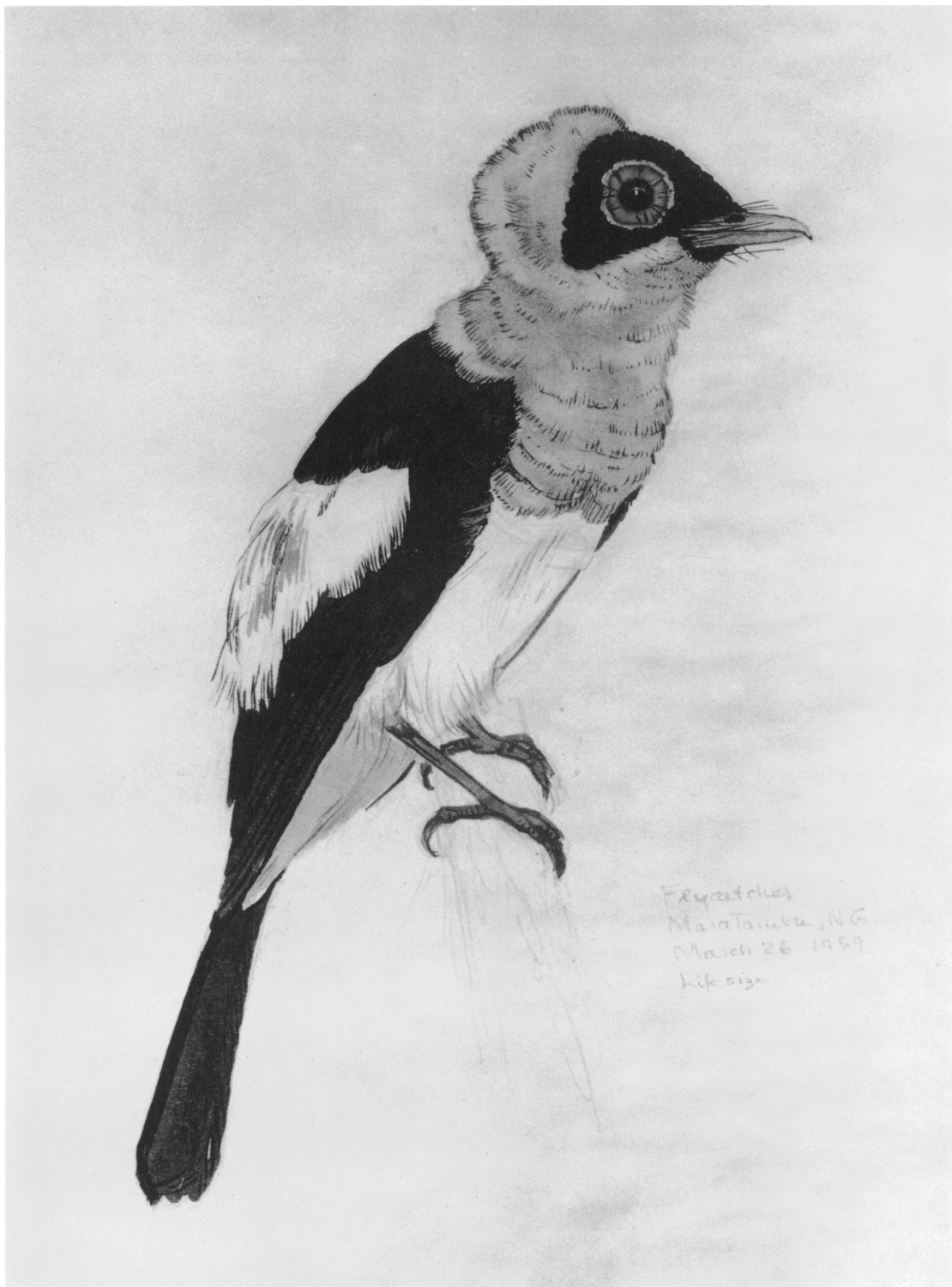
PLATES 9-14



Probosciger aterrimus stenolophus



Eupetes castanonotus burgeri, male



Arses telescopthalmus insularis, male



Phonygammus keraudrenii adelberti



Sericulus bakeri, female



Ailuroedus melanotis

Corroboration of this report was provided in the Adelbert Mountains by the Iululai of Oronga Village. When he saw a skin of this species, he volunteered the information that this bird builds a very long nest and that many birds sleep in it. Upon being questioned further, he stated that the nest is suspended from a single vine, some 12 to 20 feet up, in open forest. He added that four or five adults use a nest and that eggs are sometimes found in it.

Malurus alboscapulatus tappenbecki (Reichenow)

BLACK AND WHITE WREN WARBLER; KUNDAWA

Maratambu; Memenga Forest.

Wing: Males, 46, 47.5; females, 45.5, 46. Tail: Males, 38, 43; females, 43, 45. Weights: Males, 8.5, 9; females, 8, 9.

Our two males had much-enlarged testes.

Our specimens agree with *tappenbecki* from the Sepik River and differ from *alboscapulatus*, in the female, by being darker above and having the wing feathers with more restricted light edging. They differ from *mafulu* and *moretoni*, in the female, by being white on the abdomen and sides of the body. This is a lowland race which extends up to 4000 feet in the Adelberts.

Cisticola exilis diminuta Mathews

FANTAIL WARBLER

Utu.

Weight: 8.

Sericornis spilodera spilodera (Gray)

PALE-BILLED SERICORNIS

Memenga Forest; Nawawu.

Weights: Males, 10.5, 12.5, 13; female, 10.5.

Iris tan to red-brown.

This species was found in pairs, working along vines, small twigs, and leaves. It is a common but not easily seen species of the lower third of the forest, usually within 5 to 20 feet of the ground.

Sericornis nouhuysi oorti Rothschild and Hartert

LARGE MOUNTAIN SERICORNIS

Nawawu.

Weight: Female, 14.

Ovary much enlarged.

This bird was one of a pair shot from a low, bushy tree in which they were feeding.

Sericornis arfakianus olivaceus Salvadori

GRAY-GREEN SERICORNIS

Nawawu.

Weights: Males, 9–10.5.

Gerygone chrysogaster chrysogaster Gray

YELLOW-BELLIED GERYGONE WARBLER

Oronga.

Weight: 7.

Our single example was observed moving rapidly among the small limbs of the middle tier of original forest. It was solitary and silent.

Gerygone palpebrosa wahnesei (Meyer)

BLACK-HEADED GERYGONE WARBLER

Memenga Forest.

Weights: Male, 9.5; females, 6.5, 9.

Gerygone magnirostris affinis Meyer

SWAMP GERYGONE WARBLER

Utu.

Weight: Male, 8.

Peltops blainvillii (Lesson and Garnot)

LOWLAND PELTOPS FLYCATCHER

Suoli.

Wing: Male, 99; female, 96. Tail: Male, 75; female, 73. Weights: Male, 35.5; female, 33.

Peltops montanus Stresemann

MOUNTAIN PELTOPS FLYCATCHER

Memenga Forest; Nawawu.

Male: Wing, 109; tail, 83. Weight: 36.

Rhipidura threnothorax threnothorax Müller

SOOTY THICKET FANTAIL

Oronga.

Weight: 15.

This specimen was one of a pair 3 to 8 feet up in vines in tall, dark forest.

Rhipidura leucothorax subsp.?

WHITE-BREADED THICKET FANTAIL

Maratambu.

Specimens collected by Beck in the Madang area are intermediate between *leucothorax* and *episcopalis* (Mayr and Rand, 1937, pp. 158–159). Since our specimen was subadult, we were unable to determine with certainty its subspecies. It does, however, agree

very well with female specimens from Madang found by Mayr and Rand to be closer to *episcopalis*.

This bird was shot on a sharp, heavily forested ridge leading to Mt. Memenga. The native hunter stated that the bird was in a tangle of vines about 15 feet above the ground and was accompanied by several other small birds. This locality is in original forest in steep mountain country with no water or swampland nearby.

***Rhipidura hyperythra* subsp.?**

CHESTNUT-BELLIED FANTAIL

Maratambu; Memenga Forest; Giloup.

Weights: Males, 11.5–13; females, 11, 12.

These birds are intermediate between *mulleri* from western New Guinea and *castaneothorax* from eastern New Guinea. Three of our specimens have the extent of white on the outer web of the outer tail feathers falling within the range of *mulleri* (our birds measured 10.5, 11, 12). Three have the more extensive white of *castaneothorax* (14.5, 19, 20.5). There appears to be a cline with respect to the amount of white present, with Vogelkop birds averaging least and birds from northeastern New Guinea most.

***Rhipidura rufiventris gularis* Müller**

WHITE-THROATED FANTAIL

Memenga Forest.

Weight: 16.

***Monarcha axillaris fallax* (Ramsay)**

BLACK MONARCH FLYCATCHER

Nawawu; Kulu.

Weight: Males, 16.5–18.

***Monarcha alecto chalybeocephalus* (Garnot)**

SHINING MONARCH FLYCATCHER

Oronga.

Weight: Male, 24.

A fledgling, which is preserved in alcohol, was reported to have been with an all black bird when shot. It was perhaps 10–15 days out of the nest.

***Monarcha frater periophthalmicus* Sharpe**

BLACK-WINGED MONARCH FLYCATCHER

Nawawu.

Weights: Males, 20–24; females, 22, 23.

***Monarcha guttula* (Garnot)**

SPOT-WING MONARCH FLYCATCHER

Oronga; Memenga Forest.

Weight: 17.

An adult female had the ovary enlarged.

***Monarcha chrysomela aurantiacus* Meyer**

BLACK AND YELLOW MONARCH FLYCATCHER

Oronga; Memenga Forest.

The Memenga Forest specimens were part of a noisy wave of mixed species, including the Pygmy Honeyeater (*Oedistoma pygmaeum*) and the Black-headed Gerygone Warbler (*Gerygone palpebrosa*).

***Arses telescopthalmus insularis* (Meyer)**

FRILLED FLYCATCHER; MIANGORAVA

Plate 11

Oronga; Maratambu; Memenga Forest.

One of these specimens was shot from a mixed flock of small and medium-sized birds in the lower and middle portions of original forest at 2700 feet. Included in the flock were *Tanysiptera galatea*, *Pachycephala simplex*, *Myiolestes megarhynchus*, and at least one other species. The species was uncommon above 3000 feet.

A male of this species was observed displaying to a female on a vine 40 feet up in forest. He frilled the broad chestnut collar so that it stood out from the neck and head like a ruff, buzzed like an insect, and hopped and flitted around the female who, herself, changed positions many times.

***Tregellasia leucops melanogenys* (Meyer)**

WHITE-FACED FLYCATCHER

Nawawu.

Weights: Males, 19–22; female, 17.5.

Five of the seven males have enlarged gonads.

Our specimens agree with topotypical *melanogenys* from Sattelberg. They differ from *nigriceps* in having the crown and nape more suffused with olive and from *wahgiensis* in having the maxilla black.

***Poecilodryas hypoleuca hermani* Madarász**

BLACK AND WHITE FLYCATCHER

Oronga.

Weight: 21.

Our single example of this species was soli-

tary and sat on small limbs 30 feet up in the forest.

***Peneothello bimaculatus vicarius* (De Vis):**

WHITE-RUMPED THICKET-FLYCATCHER

Memenga Forest.

Weight: 26.

Some of the feathers on the abdomen of this specimen are tipped with white, as are those of two other specimens of this race in the Museum collection. However, there is no distinctly white abdomen as in *bimaculatus*.

The presence of this race in the Adelbert Mountains constitutes a westward extension of its range from the Huon Peninsula.

***Pachycephalopsis poliosoma hypopolia* Salvadori**

WHITE-THROATED THICKET-FLYCATCHER

Giloup; Nawawu; Kulu.

Wing: Males, 96, 100, 104; female, 93.

Weights: Males, 38, 42, 42; female, 39.

One male had quite large testes.

Our specimens are closest to *hypopolia*. They agree quite well with a specimen from Zakaheme in the Saruwaged Mountains. Specimens of *hunsteini* were not available for comparison. Our birds may be somewhat intermediate, since there is some variation in the color of the under parts of our series, some being very slightly darker than *hypopolia*, and since one male measures 104 mm. in wing length, and 107 mm. was given by Rand and Gilliard (1967) as the typical wing length in *hunsteini*.

***Pachycephala soror klossi* Ogilvie-Grant**

SCLATER'S WHISTLER

Nawawu.

Our only specimen still has some of the brown immature plumage, but has the black tail of *klossi*.

This is apparently a very uncommon species in the Wama area, perhaps because of a scarcity of forest-edge situations.

***Pachycephala griseiceps jobiensis* Meyer**

GRAY-HEADED WHISTLER

Oronga; Maratambu; Nawawu; Memenga Forest.

Weights: Males, 25, 26; females, 22, 23, 24.5.

These birds agree well with topotypical *jobiensis*. Traces of hybridization with *dubia*,

present in Keku birds, seem to be absent from our specimens.

The Gray-headed Whistler was found in mixed flocks of small and medium-sized species in the lower and middle part of mountain forest.

***Myiolestes megarhynchus tappenbecki* (Reichenow)**

BROWN SHRIKE-FLYCATCHER; MOWATAKA

Maratambu, Memenga Forest.

Weights: Males, 40–45.5; females, 39, 43.5, 45.

Bill brownish gray to lead gray. Three specimens showed gonad enlargement.

One specimen was a member of a mixed flock of small and medium-sized birds including *Tanysiptera galatea*, *Pachycephala simplex*, and *Arses telescopthalmus*. In addition to the usual insect legs and wing covers, the stomach of one specimen contained the skins of two 1-inch caterpillars.

***Pitohui kirhocephalus brunneicaudus* (Meyer)**

VARIABLE PITOUI

Maratambu; Memenga Forest.

Weights: Males, 73, 79, 84; females, 81, 91.

Iris dark brown, bill tannish gray (two streaked).

One specimen was shot in the upper middle tier of open original forest where it was feeding in company with a flock of *Myiolestes megarhynchus*. The stomach contents consisted of small black insects and small blue berries.

***Pitohui dichrous* (Bonaparte)**

BLACK-HEADED PITOUI; KORAI

Maratambu.

Weight: 87.

***Pitohui ferrugineus clarus* (Meyer)**

RUSTY PITOUI

Utu.

Weight: 116.

Native informants said this species nests inside the forest edge, about 20 to 40 feet up.

***Artamus maximus* Meyer**

GREATER WOOD SWALLOW; MATAPITAPI

Monasiri; Memenga Forest.

Weights: Male, 68; females, 64–69.

Gilliard observed and made extensive notes

on a flock of approximately 16 Greater Wood Swallows, excerpts from which are given below:

"The flock is very close-knit, with the birds following each other from perch to perch and periodically gathering in very close knots to sit for varying periods of time, but not often for longer than 10 minutes. About six dead trees and two open trees, one a casuarina and one a small leaf tree with open limbs are used for perches, but the birds sally out on occasion and gather in other trees for short periods of time. The hunting area is usually over the steep hillside gardens leading up to the small hilltop garden in which we are camped. One end of this garden is walled with original forest in which the calls of many species can be frequently heard from the clearing. In the clearing itself there are very few birds, aside from a skulking Brown Shrike-flycatcher (*Myiolestes megarhynchus*). Over the clearing three birds of prey have been seen, the Oriental Hobby (*Falco severus*), Doria's Hawk (*Megatriorchis doriae*), and once the Red-backed Kite (*Haliastur indus girrenera*). Of these only the Oriental Hobby would seem to present predatory danger to the wood swallows. Other birds seen in the solitary trees of the clearing edge are the Mountain Pigeon (*Gymnophaps albertisii*), the Purple-tailed Imperial Pigeon (*Ducula rufigaster*) and large numbers of the Coconut Lory (*Trichoglossus haematodus*).

"In this colorful setting it is a great pleasure to observe, particularly since the mountaintop falls away abruptly on 350 degrees of the horizon and a vast arc of lower mountains, all heavily forested, stretches out toward the south, east and north. Only to the northwest are there slightly higher ridges on the horizon, and only on the west is the clearing walled by high forest for the width of a narrow forested ridge or keel leading out to the garden.

"These are some impressions of *Artamus* that I sketched briefly in my notebook. Feeding: One was observed to catch a large straight-flying black insect that lumbered across the garden 30 feet up. It carried it in the bill and the insect was so large that at some angles it looked as if the legs of the bird were hanging well down. After circling with the wings flapping, the wood swallow flew up

to an upper limb of one of the tallest of the clearing's dead trees and there it fed alone. Other wood swallows were in the clearing but they did not follow the bird with the food. It was somewhat remarkable that they did not because the wood swallows had been observed to cluster in this same tree at this same height. I watched it through eight-power glasses for a good three minutes. Soon after landing on the broom-sized horizontal limb 50 feet up it transferred the insect to its feet, holding it first under one and apparently under both feet as it pulled and ate parts of the insect. It worked away at the insect as it faced me and then it turned its back, transferring the insect to the other side of the limb and pulling at it with bent head.

"Attitude while perching: *Artamus* is constantly fidgeting; when first landing it often opens the bill and cries, holding the bill open and up like a nestling begging to be fed. This greeting (if that is what it is) is returned so that I often see several birds on the top of a stump 30 or so feet tall all 'begging' toward each other. At the same time the new arrival on the perch (which at other times is a broad, nearly horizontal limb but may be a thin canted limb in the top of a casuarina) wags its tail furiously, mostly up and down (to the vertical position and a little more at times) but also crazily from side to side and sometimes even in a circular 'stirring' motion. Also it flips one wing at a time, partially dropping and opening the wing and then tucking it in at the shoulder again.

"Attitude of the group on the perch: One of the most engaging things about *Artamus* is its method of perching in knots. In the Philippines (on Bataan) I noted that the birds not only habitually clustered in the manner to be described but they sat so tightly at night that in the beam of a torch they resembled a folded bath towel draped over a high dead tree limb. I have also noted the clustering of wood swallows behind Port Moresby (the species, I believe, was *A. leucorhynchus*). Here in Memenga forest clearing I have been able to observe the clustering more closely than ever before. Often there will be two clusters, one breaking up and the other forming. During the day the birds soar out and then return to a communal perch, but some are apt to move to a new perch (one

of the eight or so favored positions about the clearing), there a few birds will gather within inches of each other or tight against the shoulders of the other, and then the ones at the first perch will dive off that perch and swoop up to the new perch, there to crowd in on the first arrivals. In perching on a thin limb the birds often face in both directions while at the same time touching, but usually most of the birds face in one direction. They preen very often and so one sees the line which may consist of eight plump birds all moving in different ways at the same instant. Some have the neck elevated in a horseshoe as they nibble at the upper breast feathers, some are puffing out the feathers to make themselves almost as round as a ball, apparently to distribute the powder of the powder down feathers (these are the only passerine birds with such constantly growing feathers), and others are preening the wings. I have often noted that in preening the wings several birds will nibble at the under wings, at the same time causing the wings to be draped over the neighboring birds on one side (only one wing is opened at a time) while at the same time another on the other side, perhaps two birds removed, has its wings wide open and draped over the first bird and a couple or so in between—a very comical sight. Thus one gets the illusion of a bunch of plump, white-breasted, dark gray-backed birds sitting in a line hugging each other (the sort of thing one would expect at a football game on a cold November day when only a few of the spectators have their fur coats with them). It is this sort of lineup that is constantly forming and reforming in the perches which average 40 feet apart but one is 80 feet away by itself.

“Attitude in leaving perch, in flying, and in landing: Wood swallows may fly up and away from the perch, but they usually dive from it. They simply step off and fall nearly straight down for 10 feet, then open the wings and level out in a long graceful swoop, nor do they then flap the wings but usually continue to soar in fast, graceful arcs. They flutter the wings in short bursts, often when it seems unnecessary as in the following case: A bird dove from a perch and then soared out over the valley. Out of curiosity, I counted slowly (averaging a second to a number) and

watched for the first sign of wing motion. I counted to 135 before the first flapping took place and then the bird, which had mounted ever higher in the sky, fluttered steeply upward for some unknown reason, certainly not just to gain more altitude. Probably an insect was sighted. But the wood swallows generally soar and flutter going down and through the dead trunks and out over the valley in long static soars, gliding like a child's paper airplane, then breaking into flurries of wing motion, only to glide again.

“In landing they usually come in low and dive up to the perch, but some come directly at it and then back paddle with the wings. Often the birds change perches in the flock when they land, as though recognizing that they belonged in another position. Some of the birds are reluctant, it seems to join in the group and these sit a few feet away. Others are highly gregarious, and even when only two birds are together they have to sit tightly against the next bird.

“Calls: One has only to listen for the constant chatter that is to be heard at all times of the day to tell where the flock happens to be regrouping. This chattering is very swallow-like and continuous. The chattering I have recorded as rapid and not very loud “kakakakakakakakak”s which are something like the squabbling notes of mice or swallows.”

***Aplonis metallica metallica* (Temminck)**

METALLIC STARLING

Utu.

Weight: 59.

***Mino anais orientalis* (Schlegel)**

GOLDEN-BREASTED MYNA

Utu.

Weights: 157, 179.

***Mino dumonti dumonti* Lesson**

YELLOW-FACED MYNA; UGRAUWA

Maratambu.

Weight: 281.

Our specimen had much-enlarged testes.

***Oriolus szalay* (Madarász)**

BROWN ORIOLE

Nawawu.

Cracticus cassicus cassicus* (Boddaert)*BLACK-HEADED BUTCHERBIRD**

Maratambu.

Wing: 158; tail: 122. Weight: 145.

Our specimen was one of a small flock found in the upper limbs of a kapiak tree growing in the forest edge.

Cracticus quoyi quoyi* (Lesson)*BLACK BUTCHERBIRD**

Oronga.

Weight: 174.

Chaetorhynchus papuensis* Meyer*MOUNTAIN DRONGO**

Nawawu; Memenga Forest.

Weights: Males, 45, 49, 50.

Gape white in subadult.

One male had greatly enlarged testes.

Gilliard found in the fresh specimens that the normally concealed white in the wing is formed by a large patch of pure white feathers that are a part of the innermost series of lesser wing coverts on the upper wing. These patches stand out prominently when the wing is extended and the scapulars are elevated or slimmed against the side of the body. At other times they are completely concealed.

Dicrurus hottentottus carbonarius* Bonaparte*SPANGLED DRONGO; KREAKRAZI**

Maratambu.

Weight: 86.

Our specimen was one of a pair found in the forest edge within 6 feet of the ground. The stomach contained a large mass of yellow-green insect matter and several black insect heads.

Gymnocorvus tristis* (Lesson and Garnot)*GRAY CROW**

Maratambu.

The following observations are extracted from the senior author's field notes:

"A flock of these birds has been occupying the second growth and original hill forests behind the village of Maratambu for the last week. They keep together in crow-like manner, but their chasing and diving are unexpected. Over and over again a bird will come peeling down the mountainside with

another in pursuit, calling in the peculiar way that I have called a whining caw. The flock is very loose-knit but apparently the birds never leave it at this season of the year. They move about through gardens in noisy fashion, not sneaking about as do the true crows.

"As they chased on occasion, rushing downward over the steep forest crown (in places so steep the hillside had slid away) the air could be heard rushing through their wings. I was able to note that the mouth is open quite wide in flight as the birds call (one opened the bill more than an inch as it called in flight, making a strange, ungainly silhouette)."

Manucodia chalybatus* (Pennant)*GREEN-BREASTED MANUCODE**

Maratambu; Memenga Forest.

Weights: Male, 262; female, 235.

The adult male had the trachea greatly elongated, measuring more than 8 inches on its exposed portions, compared with a body and neck that are only $6\frac{1}{2}$ inches long. The trachea emerges from the thorax at the neck, then bends downward over the center of the breast for $3\frac{1}{4}$ inches. It then turns sharply back on itself and, paralleling the downward elongation, leads upward to the point of initial emergence and then into the head along the slender neck. The body of this male was preserved in formalin.

Stomach contents consisted of seeds and the flesh of orange figs.

Manucodia ater ater* (Lesson)*GLOSSY-MANTLED MANUCODE**

Maratambu; Memenga Forest.

One specimen, solitary in the edge of second-growth forest, was being harassed by two drongos.

The stomach of one specimen contained hard oval seeds and a large pink berry.

***Phonygammus keraudrenii adelberti*,**

new subspecies

TRUMPET BIRD

Plate 12

TYPE: A.M.N.H. No. 791016; adult male; Nawawu, Adelbert Mountains, Mandated Territory of New Guinea; April 2, 1959; E. Thomas Gilliard.

DIAGNOSIS: Near to *keraudrenii* and *jamesi*, but with the wing coverts, wings, and tail solid steel green, not largely purplish. Further differing from *jamesi* by having the head and head tufts more bluish, less purplish. Very different from *neumanni* in having the lower back, rump, wing, and tail greenish like the upper back, neck, and head, not dark bluish violet contrasted with a greenish blue neck and head. Very different from *purpureo-violaceus* and *mayri* in having the back steel green, not bright purplish violet. Very different from *hunsteini* in having the crown plumes much shorter and the back steel green, not dark purplish violet.

Additional specimens collected at Nawawu: Three males, one female, one female? Kulu: Two males, one female.

Wing: Males, 158, 159, 164, 164,¹ 166, 167; females, 144, 156. Tail: Males, 122, 129, 131, 131, 133,¹ 138; females, 121.5. Weights: Males, 166,¹ 168, 168, 172, 185, 188; females, 135, 153.

Four males had greatly enlarged testes; one female had a somewhat enlarged ovary.

Our specimens were shot at various times from groups of five to seven birds which had gathered in the tops of trees, apparently to feed.

The range of this subspecies is the Adelbert Mountains.

***Craspedophora magnifica intercedens* (Sharpe)**

MAGNIFICENT RIFLE BIRD

Nawawu; Memenga Forest.

Weights: Males, 183, 205; females, 140, 189.

This very elusive bird of paradise is probably fairly common, judging from the harsh calls of this species that are often heard. The call is a rasping, growl-like cry, somewhat like the grating insect notes of *Ailuroedus*, but much louder and more explosive. The bird itself is rarely seen, even when one is standing beneath the tree in which the bird is calling. It probably sits on a limb close to the trunk in such a way that it is concealed in a fork.

Rambur, an expedition native with much experience in watching displaying birds of paradise and whose observations are usually

quite accurate, said that he observed a Magnificent Rifle Bird on its display tree. It was on an exposed, nearly horizontal limb of a huge tree which towered over the forest and was heavily adorned with arboreal plants and vines. The male, he said, opened the wings wide, held them open and shivered them (Rambur imitated it with his arms) and then slowly retracted them, holding them up, to the body, then furled them very much as the Lesser Bird of Paradise does in display.

***Diphyllodes magnificus chrysopterus* Elliot**

MAGNIFICENT BIRD OF PARADISE

Memenga Forest.

Weights: Male, 119; females, 99, 113.

While skinning one of the females, the senior author saw a large orange yolk and much egg white emerge from the oviduct. The bird was dissected, but no eggshell was found, only a white, leathery sac. The ovary was much enlarged, with one ovum about ready to be shed. The adult male had enlarged testes.

Our male agrees best with the male of *chrysopterus*, having the upper back darker, less crimson, than in *hunsteini*. The head is in molt, but the few feathers present in the center are of the duller brown color characteristic of *chrysopterus*.

The females and young males of *chrysopterus* differ from those of *hunsteini* in having the head and back darker, more greenish brown, less orange-brown, and in lacking the orange margins often present on the secondaries in *hunsteini*. In these characters our birds also agree with *chrysopterus*.

For a description of a bower of this bird observed by the senior author in the Adelbert Mountains, see Gilliard (in press).

***Cicinnurus regius similis* Stresemann**

KING BIRD OF PARADISE

Oronga.

Weight: 63.

***Paradisaea minor finschi* Meyer**

LESSER BIRD OF PARADISE; ARAMBA (MALE),
AVENGENG (FEMALE)

Maratambu; Nawawu; Kulu; Memenga Forest.

Weights: Seven males, 264–291; females, 183, 185.

¹ Type.

Three males had enlarged testes.

The two females and particularly the two subadult males have a yellow wash on the abdomen and flanks. This and the brilliant golden yellow of the flank plumes and slightly darker breast of the adult males probably indicate introgression of *P. raggiana augustae-victoriae* genes from the southeast.

The Lesser Bird of Paradise appears to be very common in all areas surveyed by the expedition. Males were displaying during March and April (the rainy season), but native informants said that the main display time is in July and August when certain ancestral trees may be visited by large numbers of males.

The main display tree in display area 2 was a wild mango, a "mangaro," 85 feet tall, with the main display limbs 70 feet up, just under the canopy. At that point many limbs were horizontal or sloped gently upward and radiated around the straight trunk like spokes. The trunk was about $2\frac{1}{2}$ feet in diameter 6 feet up and was one of the largest trees visible in the immediate area. It was on the north slope of an east-west ridge near the summit of the ridge, in a position where the morning sun hit the display area at about 7:00 A.M. There were tree ferns and pandanus nearby, and about six small to medium-sized vines scaled the trunk of the display tree. The floor of the forest was easily walked through, but in places fallen quela trunks were obstructions. There were, however, many nettles and an abundance of black leeches.

Gilliard (in press) will publish most of the extensive observations on the breeding behavior of this species that he made in the Adelbert Mountains. The following observations, however, on display by immature males are of interest:

March 28, Display Area No. 2: "At about 11:40 the adult males flew away and after a minute or two of quiet I saw that two white-breasted birds were still in the tree. These birds had been moving about the edges of the display for the entire time and several times I had seen one of them on a branch near a displaying male in full plumage. They would stand on long legs and stretch, often looking down at me, and one climbed a vine after clinging to it like a giant grass warbler for several seconds. Now that the adult males were

gone, the two white-breasted birds jumped and darted from limb to limb, standing on the worn areas of the main perching place and shaking their bodies as though trying to display nonexistent plumes. The two white-breasted birds stood within a foot of each other at times and clearly appeared to be displaying with the wings partially opened just as had the males in full plumage. Accompanying their movements could be heard characteristic display notes, and their calls were curiously off pitch, the call being more crow-like and less melodious.

"These birds, I take it, are young males displaying with the adult males part of the time and on the dance perches after the males leave."

***Sericulus bakeri* (Chapin)**

NEW GUINEA REGENT BOWERBIRD

Plate 13

Nawawu; Memenga Forest.

Wing: Males, 137, 138, 143; immature male, 140.5; females, 132, 136.5, 139, 139, 142. Tail: Males, 77, 78, 84; immature male, 86; females, 88, 89, 92. Weights: Males, 178, 180, 183; immature male, 170; females, 164, 165, 173, 177, 184.

The high point of the expedition was the rediscovery of the elusive New Guinea Regent Bowerbird. Gilliard's notes, made upon seeing the first two specimens are quoted below:

"March 15, Sunday. *Sericulus bakeri* was collected last evening by both Bowie and Rambur in the vicinity of Camp 5. The birds were brought down to me this morning with great ceremony. Rambur, who had shot an adult male in the top of the forest, wrapped it in a green leaf and placed the valuable bird in the bottom of a transparent bag. On top of this he placed the female in such a way that it was concealed by two catbird bowerbirds, which themselves were great rarities and new to my collection. Then on top of this were packed the other new birds that had been collected on the top of the mountain yesterday afternoon and today. As I unpacked the bag, I noted the catbirds and a queer-looking bird which I thought just might be the female of *S. bakeri*. I did not rush things but examined each species with

care, remarking its identity and rarity, and then, lo! I got down to the female, and it was *S. bakeri*, the long lost species! After much jubilation and backslapping, I reached casually into the sack and pulled out the leaf-wrapped bird, expecting to find a fruit pigeon or something of the sort but then saw the reddish gold of the nape of the male *S. bakeri*! I have never had a bigger thrill except at Mt. Hagen in 1950 when the new species, *Archboldia sanfordi*, was brought into camp. That time I got out a type label and used it as a field label; this time I went for the camera, and Margaret made pictures of Tesako and me holding the two birds, the male and female, against the painting in color of the two that I have shown to so many thousands of natives in vain since 1956." (This photograph has been published in *Auk*; see Amadon and Murphy, 1966.)

Gilliard (in press) will give a detailed account of his long search for and subsequent rediscovery and observations of the New Guinea Regent. It is a bird of the middle and upper stories of the forest above 3000 feet in the Adelbert Range. Arduous efforts were made to locate the bower of this species, and in addition local native woodsmen were offered large rewards for information concerning it. Despite all efforts, no bower was found, and local natives had no knowledge of such a bower or of visits to the ground by this species. Gilliard (in press) was convinced that this bowerbird does not build a bower. Nevertheless it is now known that the other two species of *Sericulus* do, at least sometimes, build bowers, and doubtless the same is true of *S. bakeri*.

The female of this species (pl. 13) was unknown until it was collected by the Gilliards. Its plumage will be described in full by Gilliard (in press).

The three males in adult plumage were in heavy molt, all having most of the red and gold of the head and back encased in short sheaths. Heavy molt was also present on throat and upper breast, wings, and tail of each specimen.

In the present paper we follow Mayr and Jennings (1952, pp. 7-8) and Gilliard (in press) in considering the New Guinea Regent Bowerbird congeneric with the Australian species *Sericulus chrysocephalus*.

Ailuroedus melanotis subsp.?

BLACK-EARED CATBIRD

Nawawu.

Weight: 228.

Iris rust; bill whitish; skin on face dark gray; feet silver-gray. Ovary enlarged.

Mayr and Jennings (1952, pp. 1-3) considered *Ailuroedus crassirostris* and *A. melanotis* to a conspecific. However, Gilliard (in press) believes that the differences between the populations are too pronounced to be subspecific. His treatment of the three green catbirds (*A. melanotis*, *A. crassirostris*, and *A. buccoides*) as a superspecies is adopted here.

This species was seen only once in 11 days of hunting at and around Wama; it was not obtained by Beck in the Adelbert Mountains.

A study of the various populations from the mainland of New Guinea indicates that the Vogelkop population (*arfakianus*), the northwest New Guinea population (*jobiensis*), and the Huon Peninsula population (*astigmaticus*) are well-marked races. Unexpectedly, the population from the Adelbert Mountains just west of the mountains of the Huon Peninsula is very different from the Huon birds and nearest to the very dark *jobiensis*. Adelbert birds differ, however, by having the abdomen and flanks darker, more deep chestnut brown, less ochraceous, and the head with the spotting darker, more chestnut, less amber.

On the other hand, the differences distinguishing the Snow Mountains population (*facialis*), the Hunstein spitze population (*guttaticollis*), and the population of south-eastern New Guinea (*melanocephalus*) are slight and difficult to evaluate. Comparing topotypical *facialis* with a series of *melanocephalus*, we find that the differences noted by Mayr (1936, p. 4) are virtually unrecognizable in the females (except for the axillaries and under wing coverts which are clearly more whitish, less gray, in *facialis*). In a comparison of males, the best of a series of "thin" characters (in addition to under wing coloration) is the spotting of the head and nape. The spots are larger, more numerous, and darker in *facialis*. In certain skins of *melanocephalus*, however, the head color and markings are nearly similar.

Guttaticollis (cotype: Hunstein spitze) ap-

pears nearest to *facialis*, since it has the darker, more brown, less amber head spotting (but there is some overlap in this character between *facialis* and *melanocephalus*) and the whiter lores. It differs distinctly from both *facialis* and *melanocephalus* by having the chest more clear ochraceous brown and less heavily scalloped with blackish. The following measurements show that size cannot be used to separate these three similar races.

Measurements, in millimeters, of the wing and tail, respectively, of *Ailuroedus melanotis* are:

<i>facialis</i>	
2 males	153, 159; 114, 116
4 females	147-160; 105-113
<i>guttaticollis</i>	
1 male	147; 114
<i>melanocephalus</i>	
5 males	142-159; 107-122
4 females	145-150; 112-116

Facialis and *melanocephalus* are valid but thinly differentiated races. *Guttaticollis* is a perfectly good race. The Adelbert Mountain specimen is different from but nearest to *jobiensis*. Attention is here called to it so that additional material will be obtained and the presumed new race can be formally recognized.

***Ailuroedus buccoides geislerorum* Meyer**

WHITE-EARED CATBIRD

Oronga; Maratambu; Memenga Forest.

Weights: Males, 154, 159; females, 122, 128, 132, 135.

Two specimens had the ovary much enlarged; one had enlarged testes.

Observations on the defense of what was apparently the courtship territory of a member of this little-known species was made by the senior author in the Adelberts. For a summary of these observations, see Gilliard (in press).

***Nectarinia jugularis frenata* (Müller)**

YELLOW-BELLIED SUNBIRD

Oronga.

Our only specimen was shot from a river-edge tree. It was moving in company with another individual of the same species. The testes were enlarged.

***Nectarinia sericeus sericeus* (Lesson)**

BLACK SUNBIRD; KITSOWOO

Maratambu.

One individual, brought into field camp with a damaged wing, was observed and photographed in life. Because of the iridescent feathers on the head, subsurface changes in shape were easy to see. While the bird was feeding, there was a constant play of light across these feathers as the long, extensile tongue flicked in and out. In particular, when the tongue was retracted, the rear of the skull seemed to bulge at about the midline.

***Glycichaera fallax sylvia* Reichenow**

WHITE-EYED HONEYEATER

Maratambu.

Weights: Male, 10; female, 11.

***Oedistoma pygmaeum pygmaeum* Salvadori**

PYGMY HONEYEATER

Maratambu; Memenga Forest.

Weights: 5, 5.

A native hunter shot this small honeyeater about 12 feet up in the leaves of second-growth garden forest. It was part of a wave of birds including also *Monarcha chrysomela* and *Gerygone palpebrosa*.

Myzomela eques primitiva

Stresemann and Paludan

RED-SPOT MYZOMELA; ASINUNGU, PISSIKA

Maratambu.

Weights: Males, 15.5, 16.5, 18, 18.

Three specimens had the testes enlarged.

***Myzomela cruentata cruentata* Meyer**

RED MYZOMELA

Maratambu.

Weights: 8, 8.5, 9.

The Red Myzomela was the first bird taken by the expedition. Curiously, it was not obtained 30 years ago by Rollo Beck when he collected at Menganum, which is only a few miles from Maratambu on the same range.

***Myzomela nigrita meyeri* Salvadori**

BLACK HONEYEATER

Maratambu.

Weights: Males, 9, 10; females, 8.5, 9.

Toxorhamphus novaeguineae
novaeguineae (Lesson)

YELLOW-BELLIED LONGBILL

Oronga; Memenga Forest.

Weights: Males, 12, 13, 14.5, 16.

Three specimens had enlarged gonads.

Toxorhamphus iliolophus
iliolophus (Salvadori)

GRAY-BELLIED LONGBILL

Maratambu; Memenga Forest.

Weights: 13.5, 14.

According to native hunters, this species keeps to the lower third of the forest where it is sometimes found in pairs. Its call is reported to be a soft, kisslike, sucking noise.

Toxorhamphus poliopterus subspecies?

SLATY-CHINNED LONGBILL

Nawawu.

Wing: Male, 67.5; female, 60. Bill from base: Male, 32.5; female, 30. Wing-bill index: Male, 48.1; female, 50. Weights: Male, 11; female, 8.

There are three thinly differentiated races of this species: *poliopterus* from southeastern New Guinea, *septentrionalis* from the Huon Peninsula and the Wahgi region, and *maximus* from the Weyland Mountains. Although our specimens are closest geographically to *septentrionalis*, they seem to agree best in size with southeastern New Guinea birds. Mayr and Gilliard (1954, p. 366) gave measurements for males of all three races. Our male has the longer bill of *poliopterus* and is within the range of wing measurements given for this race (although some Wahgi birds are as small). We have compiled from various sources the following measurements for females: *poliopterus*, wing 58–62 (8), bill 28–30 (8); *septentrionalis*, wing 62–64 (5), bill 27.5, 27.5; *maximus*, wing 62, 65, bill 30, 31. Measurements of our female also agree with those of *poliopterus*. Both specimens also have the higher wing-bill index characteristic of the southeastern New Guinea birds (see Mayr and Rand, 1935, p. 15); in fact, an index of 50 is higher than that of any given for females of *poliopterus*. There is much overlap in crown color, and we could come to no taxonomic decision on this basis.

Since our sample size is quite small, we believe that taxonomic determination must await the collection of a larger series from several localities so that it can be determined whether the differences that have been indicated are, in fact, only individual variation.

Melilestes megarhynchus stresemanni Hartert

LONG-BILLED HONEYEATER

Maratambu; Memenga Forest; Kulu.

Weights: Males, 50, 57; female, 48.

Iris variable, males red-orange or amber suffused with red, subadult male dark brown, female light rust, sex? orange; one male had enlarged testes.

Our series from the Adelbert Mountains is closest to nearly topotypical *stresemanni*, but it averages somewhat more brownish on the back and abdomen, perhaps indicating that this population is not completely cut off from gene flow from the southeast.

Xanthotis chrysotis philemon Stresemann

BROWN XANTHOTIS; AHSENONGO, ILIGOGO

Oronga; Maratambu; Nawawu; Memenga Forest.

Weights: Eight males, 50–55; four females, 45–49.5.

Five specimens had enlarged gonads.

These birds agree quite well with nearly topotypical *philemon*. They are darker on the back than *madaraszii* and lack the olive wash present in that race on the shoulders and upper back.

Xanthotis polygramma septentrionalis Mayr

SPOTTED XANTHOTIS

Maratambu; Memenga Forest; Nawawu; Kulu.

Weights: Male, 52; female, 45.

Iris pale blue-gray (male), brown (female). Skin on face behind eye flesh to rose; skin on face above and below eye yellow to orange; inside of mouth pale amber.

The testes were enlarged in one specimen.

These birds agree with *septentrionalis* in having a reduced amount of yellow in the ear coverts and in having the olive green edging of the feathers on the back narrower, with white tips almost lacking.

Meliphaga aruensis sharpei
(Rothschild and Hartert)

PUFF-BACKED MELIPHAGA

Maratambu.

Weights: Male, 30; female, 37.

The female had the ovary much enlarged with one egg ready for laying.

Meliphaga montana gretae
Gyldenstolpe and Gilliard

WHITE-EARED MOUNTAIN MELIPHAGA

Maratambu; Nawawu; Memenga Forest.

Wing: Five males, 88.5–94; nine females, 79.5–84. Tail: Five males, 72.5–80; nine females, 66–71.5. Weights: Five males, 29.5–34; nine females, 26–34.5.

Four specimens had enlarged gonads; one of these had an egg ready for laying.

The specimens from the Adelbert Mountains appear quite green compared with *M. m. sepik* from the mountains of the upper Sepik River. They are closest to *M. m. auge* of southeastern New Guinea, but appear somewhat greener above and the wing and tail average longer. Since these are the characters by which *gretae* was separated from *sepik* and *auge* by Gilliard (*in* Gyldenstolpe, 1955), these birds are tentatively assigned to that race, although no specimens of *gretae* were seen.

Meliphaga analoga connectens Salomonsen

MIMIC MELIPHAGA; SUAKILA

Maratambu; Nawawu; Kulu.

Wing: Males, 76, 77, 80, 81; females, 75, 77. Weights: Males, 18, 20, 22.5, 25.5; females, 18.5, 23.5.

One male had much enlarged testes.

Salomonsen (1966, p. 5) has named a new subspecies, *connectens*, the type of which is a bird collected by Beck in the area around Madang. The differences in color noted by Salomonsen are slight between series of *flavida* and *connectens*, and there is considerable overlap. The type of *flavida* from Japan is an extreme and shows more yellow than any other specimen available for comparison. It is possible that foxing accounts for some of the difference noted by Salomonsen, since our birds are slightly darker green than any. However, pending publication of Salomonsen's monograph on the Meliphagidae, we

tentatively assign our birds to the new subspecies *connectens*.

Pycnopygius ixoides proximus (Madarász)

BROWN HONEYEATER

Memenga Forest.

Weight: 34.

Philemon meyeri Salvadori

MEYER'S FRIAR BIRD

Maratambu; Nawawu; Kulu.

Weights: Males, 53, 53, 58; female, 49.

One male had the testes greatly enlarged.

A subadult male had the upper chest washed with yellow.

Philemon novaeguineae jobiensis (Meyer)

LEATHERHEAD; KOWA

Maratambu.

Weight: 161.

The average ceiling for this species in the Adelberts appears to be about 3500 feet, but the birds are rather frequently found up to 4000 feet.

Dicaeum geelvinkianum rubrocoronatum
Sharpe

RED-CAPPED FLOWERPECKER

Dawa; Maratambu.

Wing: Male, 52.5; females, 49.5, 51. Weights: Male, 7; females, 7, 7.5.

Two white seeds the size of large peas, each with some green at one end, were found in the stomach. These were sticky and clung first to the walls of the digestive tract and then to the side of the scalpel.

A nest with two eggs was collected. Two native carriers found the nest in a native garden, slung from a near-vertical shaft of a croton bush. It was penduline, with a side entrance so near the top that the opening was more like an opening in the uppermost end of the pensile tube through which the bird clambered down to reach the nest cavity, and measured 100 mm. long by 45 mm. wide, with the nest entrance opening 17 mm. wide. The construction was, like that of the well-known nest of the Australian *Dicaeum*, a beautiful strong felting of animal silks, mostly gray, with reddish brown fern striping intermixed, giving the structure a camouflaged color. It appeared warm, as tight as

woven wool, and it was probably nearly waterproof.

The eggs were pure white. One had the yolk undeveloped, and one had a well-developed embryo.

Melanocharis nigra unicolor Salvadori

BLACK BERRYPECKER

Nawawu; Memenga Forest.

Weights: Four males, 11–11.5; females, 12, 14.

One specimen had enlarged testes.

Zosterops minor subsp.?

BLACK-FRONTED WHITE-EYE

Memenga Forest.

Weights: Male, 11.5; females, 11, 12.

Two specimens had much enlarged gonads.

Our four specimens from Memenga Forest are intermediate between *Z. m. minor*, from Japen Island and the mountains of northern New Guinea, and *Z. m. gregaria*, from the

Huon Peninsula. They agree with *minor* in having the forehead, head, and back all yellow green, but they have the broader white eye ring characteristic of *gregaria*. The Adelbert population might be named on the basis of these characters, but we believe that no useful purpose would be served by adding another name to the list of subspecies until further collecting and study are done.

Three of our specimens were shot from a group in ridge forest in a semi-open part of the canopy, approximately 30 feet up.

Lonchura tristissima calaminoros (Reichenow)

STREAK-HEADED MANNIKIN; PISIKA

Utu; Maratambu.

Weight: 9.

One of our specimens was a member of a group of four that flew along the forest edge and landed for a few moments in a mango tree over the grass. It was shot from a perch 12 feet up.

APPENDIX

LIST OF SPECIES REPRESENTED BY SPECIMENS IN ALCOHOL

*Dendrocygna guttata*¹
*Ducula zoeae*¹
Gymnophaps albertisii
*Reinwardtoena reinwardtsi*¹
Otidiphaps nobilis
Goura victoria (head only)
Trichoglossus haematodus
Psittrichas fulgidus
Larius roratus
Geoffroyus geoffroyi
Podargus ocellatus
Dacelo gaudichaud
Lalage atrovirens
Crateroscelis murina
*Eupetes caeruleus*¹
Cisticola exilis
Sericornis arfakianus
Gerygone palpebrosa
Rhipidura rufiventris
Monarcha alecto
Monarcha frater

¹ No study skin.

Tregellasia leucops
Peneothello bimaculatus
Dicrurus hottentottus
Chaetorhynchus papuensis
Gymnocorvus tristis
Manucodia ater
Manucodia chalybatus
Phonygammus keraudrenii
Diphyllodes magnificus
Cicinnurus regius
Paradisaea minor
Sericulus bakeri
Ailuroedus crassirostris
Ailuroedus buccoides
Nectarinia jugularis
Oedistoma pygmaeum
Myzomela nigrata
Toxorhamphus iliolophus
Xanthotis chrysotis
Meliphaga montana
Philemon meyeri
Lonchura tristissima

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