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BIRDS OF THE KIMBE BAY AREA, WEST NEW BRITAIN, PAPUA NEW GUINEA

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ABSTRACT.—We report our observations of birds in the Kimbe Bay area of West New Britain and compare species seen with those collected by the Whitney South Sea Expedition (1932) in the same area. We saw and definitely identified 61 species, including 44 of the 83 species seen or collected previously. Avifaunal changes in the much-disturbed habitats we visited seem to have been minimal, possibly due to the flexibility inherent in the species that were able to colonize New Britain. Birds restricted to undisturbed forest, including many of the endemic species of presumably longer residence on the island, do not appear able to adapt to the disturbed areas and are therefore the vulnerable species when primary forest is destroyed.

We spent the period 11–19 October 1979 in the vicinity of Kimbe Bay, West New Britain (see Fig. 1), photographing and observing birds. As the Whitney South Sea Expedition of the American Museum of Natural History under the leadership of William Coultas had collected in the same area 1 October to 6 December 1932, we decided that a comparison of the species lists might show if avifaunal changes commensurate with the ecological changes had taken place in the past 47 years. All of the information concerning Coultas's localities and collection is from his unpublished field journal in the Department of Ornithology, American Museum of Natural History.

STUDY AREAS

We were at Bialla between 11–17 October, with three visits to the Balima River, approximately 20 km east; 18–19 October was spent at Hoskins. We saw 62 species; 5 other species were questionably identified.

Most of the area around Bialla is planted with coconut trees (*Cocos nucifera*) that date from before 1941, have cocoa (*Theobroma cacao*) planted beneath, and are no longer kept clear of undergrowth. More recently, oil palms (*Elaeis guineensis*) have been planted extensively. Little undergrowth exists and the palms are no more than 6 m high. Within and around the town are small areas of garden, fallow garden, and second growth, with a very few patches of forest in ravines. There is some grassland in the town itself. For some distance from Bialla the forest is being rapidly cut for oil palm plantings, and we were unable to visit any areas of undisturbed forest during our stay.

The Balima River is a shallow stream with a broad, gravelly floodplain. The water was low in October, exposing large areas of gravel where Kamarere (*Eucalyptus deglupta*) trees grow in depressions. Areas of disturbed second-growth vegetation also occur.

Hoskins is surrounded by coconut plantations that date from before the Second World War. These areas have planted cocoa as well as considerable underbrush. Both Bialla and Hoskins have shore areas and airstrips.

PREVIOUS ORNITHOLOGICAL WORK

Coultas collected from sea level to approximately 1,850 m. His collecting altitudes were not exact as he often collected over a broad altitudinal range in any one day, using only the name of his base camp on the label. In each locality he sampled various habitats including gardens and second-growth forest. His two helpers, John and Mike James, continued collecting on the coast while Coultas was in the mountains, but he was dissatisfied with their lack of initiative and fired them when the expedition again reached Rabaul. Thus they probably contributed very little to the overall collection, and because they were frequently sent out along the shore to collect, shorebirds were probably under-represented.

Coultas's collecting localities were the following: Walo was on the coast surrounded by low, swampy ground with very dense undergrowth. Mosquitoes were of "arctic density," and one had to travel about five miles into the interior before the land began to rise. The Nakanai Mountains were about 17 km distant. Tarobi was on the coast 8 km west of Walo; Pasusu was also at sea level, about 4 km inland from Tarobi. Segi (=Sege) was to the south and east of Walo at 215 m; the soil there was barren and rocky with grassland and second growth and with no tall forest.

His mountain collecting camps were Malutu

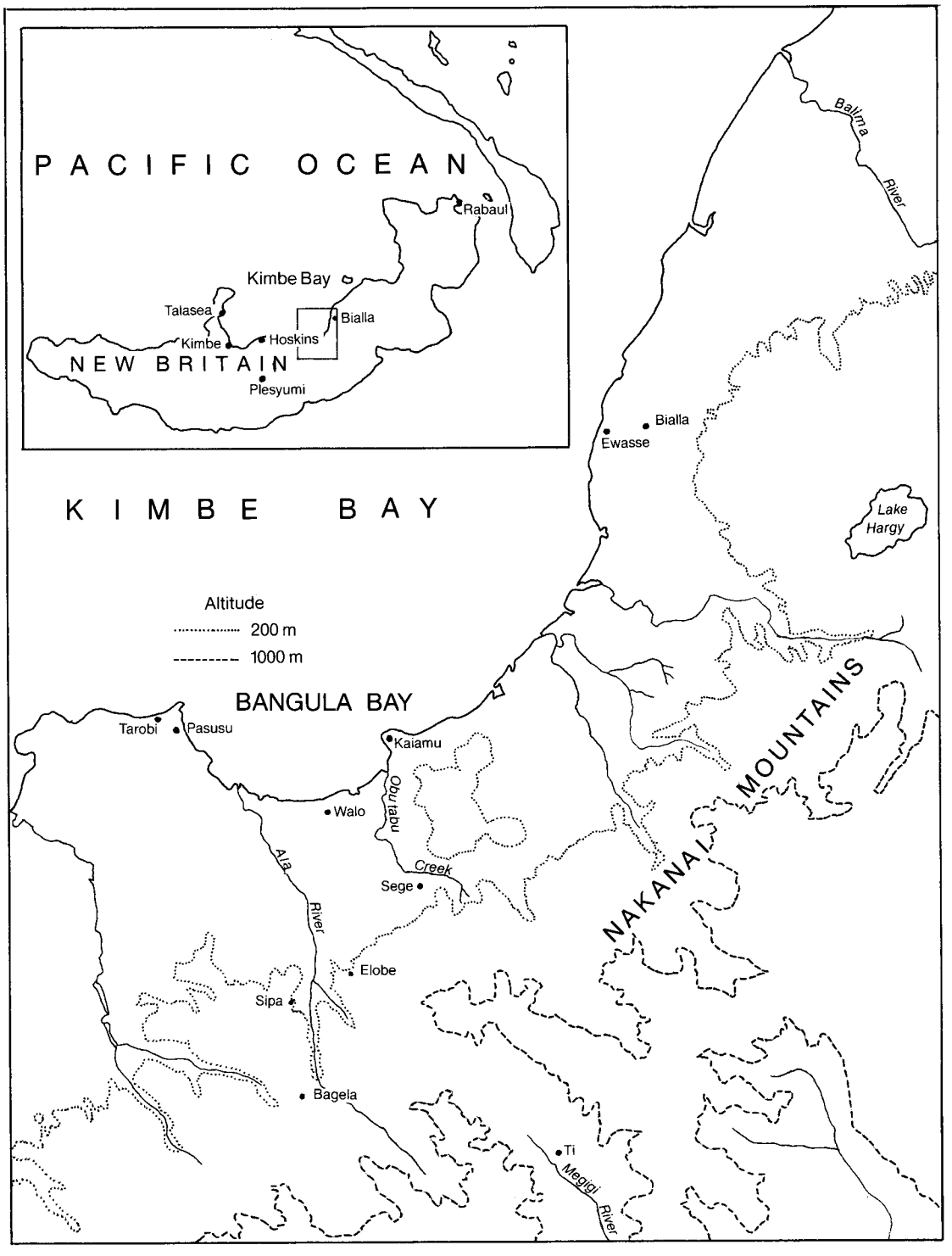

FIGURE 1. Map of the Kimbe Bay area, West New Britain, Papua New Guinea.

at 850 m; Lobi, where Coultas collected from 600 to 1,500 m; Ti at 900 m; Sipa at 750 m; and Lobuki at approximately 1,200 m. Sipa was 17 km from the coast in an area where the mountain slopes were very steep with narrow ridges. The lower forests had heavy undergrowth; the higher forests had a denser canopy and less undergrowth. Malutu was 6 to 7.5 km farther inland from Sipa and surrounded by virgin forest. Kaiamu, Bagela, and Gaigeki were collecting localities about which no information was given. We have shown as many of

these places on Figure 1 as we have been able to find on maps of the area.

One of the expedition's surveys was from Malutu through Lobuki to Ti and return. Lobuki was below a 1,350 m ridge, beyond which all streams flowed south. At Ti, the last village of the Nakanai people, the forest was neither rich nor abundant, and birds were scarce. Returning to Malutu from Ti via a different route, Coultas crossed a ridge at 1,900 m and saw no birds. He did, however, see much moss in the forest at that altitude, although moss forest is apparently rare in New Britain (Gilliard and LeCroy 1967:183).

Coultas spent one night at Bialla on his way back to Rabaul but collected no specimens. He collected 82 species of birds and heard *Tyto aurantia*, records that we have used as the basis for Table 1. The Coultas collection from New Britain has never been reported as a whole but has served as a basis for numerous papers on Bismarck Archipelago birds. References to most of these papers, by Mayr and others, were given in Gilliard and LeCroy (1967).

Orenstein (1976) spent 1–3 November 1973 in the Plesyumi area in the eastern foothills of the Whiteman Mountains, due south of Hoskins. He also spent several days at Talasea and Kimbe and has very kindly provided us with a list of his observations (Orenstein, pers. comm.). These recent records from nearby areas have been used in the discussion to supplement our own.

OBSERVATIONS

Table 1 is a complete listing of species recorded by Coultas and by us. The taxonomy and English names follow the list in Peckover and Filewood (1976) except that in a few cases we have used English names from Rand and Gilliard (1967), Gilliard and LeCroy (1967), or the *A.O.U. Check-list* (1982). Here we consider *Henicopernis infuscata* a full species. Below are additional notes on some species.

Henicopernis infuscata. At Bialla on 15 October we watched one of these buzzards circling close overhead and could see clearly the broadly barred underwing and tail and its otherwise all dark underparts. The following day we saw an individual that was similar in shape but had underwings obscurely barred and some very dark barring on the abdomen. It may have been this species, but such a plumage has not been described.

Haliastur indus. Common, in contrast to other falconiforms. One was attacked by a pair of Spangled Drongos, one of which flew off with a feather in its beak.

Pandion haliaetus. At Bialla, Osprey were nesting in a high fork of a solitary dead tree about 400 m from the shore.

Pluvialis dominica. Common on the Bialla and Hoskins airstrips. Once we saw approximately 100 of these plovers on the Bialla strip. This species has probably become more numerous in New Britain, as it has in New Guinea, owing to the increase in airstrips.

Charadrius dubius. A male and a female in breeding plumage and a non-breeding individual were seen at the Balima River.

Tringa hypoleucos. Frequently encountered singly along the shore at Bialla and Hoskins and at both airstrips, but on 19 October many were concentrated in the grass of the Hoskins airstrip.

Ducula pistrinaria. Coultas reported that this species roosted on offshore islands, congregated at Tarobi morning and evening, and flew into the mountains to feed.

Ducula melanochroa. Coultas noted that this fruitpigeon is especially prone to sit in a treetop and never utter a sound. "If one is fortunate enough to catch them feeding, the sound of falling fruit will be sufficient indication of their whereabouts." He found it to be common in the mountain forests.

Gymnophaps albertisii. Very common at Bialla at sea level. It fed in trees in gardens near houses and flew overhead in flocks of up to 12. We also saw it in the treetops in second-growth areas. It fed about 12 m up in the same trees with *Aplonis metallica.*

On 16 October three individuals were observed as one puffed out its breast and buried its bill in its feathers. It then sidled along the branch toward another bird and then sidled back and sat very close to the other bird. We heard no vocalization and the latter two birds flew away.

Coultas noted that he found this species in the mountains from 850 to 1,200 m and only where a particular tree with purple berries occurred.

Chalcophaps stephani. Once seen flying up from between oil palms. One other time we saw an individual in a patch of disturbed forest scratching in the leaf litter. Nearby were two snares about 3 m apart in an area where the ground was much scratched, indicating that these birds regularly forage in the same areas.

Lorius hypoinochrous. Common. At Hoskins it seemed to prefer eating the blossoms or very tiny fruits (approximately 6 mm diameter) of coconut trees.

Geoffroyus heteroclitus. On 13 October we observed a female entering a hole in the dead vertical stump of a limb about 20 m up in a solitary breadfruit (*Artocarpus altilis*) tree in a garden. She then began excavating. The nest entrance hole was large, perhaps 150 mm across, and larger than nest entrances of *G. geoffroyi* on New Guinea.

Scythrops novaehollandiae. Common in and around Bialla. In the early morning, just before 5:30, those in the roost tree became active. The birds sounded like a herd of pigs squealing, fighting and grunting. They began leaving the tree in ones and twos, croaking hoarsely, and sometimes circling back to land in the tree several times before leaving the area. In the evening they returned to the tree in ones and twos, flying strongly and directly towards the roost.

This cuckoo often stood up high on its legs with the body horizontal. Once this posture appeared to be associated with an agonistic encounter; one bird assumed this stance and hopped toward another, croaking and with wings partially extended and held down. It then chased the other bird and returned to the tree.

Twice we saw a Channel-billed Cuckoo and a crow together. The crow was not chasing the cuckoo, rather the two birds circled together several times before separating.

Father O. Meyer (1933) found what was perhaps an egg of this species in the nest of a crow. It was dirty, earth yellow with gray and brown-gray spots. He found these cuckoos common and obvious during the breeding season of the crows in the northwest season (November to April), indicating that they breed on New Britain. The species may, however, be nomadic as Coultas neither collected it nor mentioned its presence.

Centropus violaceus. Coultas found a nest with hatching eggs in late November. The nest was "similar to that of the American Crow," and was in the top of a tall tree. We

TABLE 1. Bird species known from the Bangula Bay area and Hoskins, West New Britain.

	Coultas	LeCroy and Peckover
Casuarius bennetti, Little Cassowary	W*	–
Egretta sacra, Eastern Reef Heron	W	–
Nycticorax caledonicus, Nankeen Night Heron	–	B
Aviceda subcristata, Crested Hawk	W, L	B, BR
Henicopernis infuscata, New Britain Buzzard	M	B
Accipiter novaehollandiae, Grey Goshawk	N, T	B
Accipiter brachyurus, New Britain Sparrowhawk	N	–
Haliastur indus, Brahminy Kite	–	B, BR
Pandion haliaetus, Osprey	W	B
Megapodius freycinet, Scrubfowl	W, T	–
Coturnix chinensis, King Quail	K	–
Rallus insignis, Pink-legged Rail	M, W	–
Poliolimnas cinereus, White-browed Crake	W	–
Amaurornis olivaceus, Rufous-tailed Bushhen	M	–
Pluvialis dominica, Lesser Golden-Plover	W	B, H
Charadrius dubius, Little Ringed Plover	–	BR
Numenius phaeopus, Whimbrel	W	B
Numenius minutus, Little Whimbrel	–	B
Tringa hypoleucos, Common Sandpiper	W	B, H
Gallinago megala, Swinhoe's Snipe	W	BR(?), H
Calidris acuminata, Sharp-tailed Sandpiper	–	B
Calidris ruficollis, Rufous-necked Stint	–	BR
Burhinus neglectus, Beach Stonecurlew	W	–
Sterna hirundo, Common Tern	–	H
Sterna dougallii, Roseate Tern	W, T	–
Sterna sumatrana, Black-naped Tern	–	H
Sterna bergii, Greater Crested Tern	T	BR, H
Ptilinopus insolitus, Harnessed Fruitdove	N, W	B
Ptilinopus rivoli, White-breasted Fruitdove	N, W	–
Ducula rubricera, Red-knobbed Fruitpigeon	L, T	–
Ducula spilorrhoa, Torres Strait Pigeon	L, T	B
Ducula pistrinaria, Gray Imperial Pigeon	P, T	–
Ducula finschii, Bar-tailed Fruitpigeon	N, W	B
Ducula melanochroa, Blue-black Fruitpigeon	L, M, Si, Ti	–
Gymnophaps albertisii, Bare-eyed Pigeon	N	B
Macropygia amboinensis, Brown Cuckoodove	L	B
Macropygia nigrirostris, Rusty Cuckoodove	–	B
Reinwardtoena browni, Black-and-White Cuckoodove	BB	–
Chalcophaps stephani, Stephan's Ground-Dove	W, T	B
Gallicolumba beccarii, Gray-bibbed Ground-Dove	BB	–
Gallicolumba jobiensis, White-bibbed Ground-Dove	L	–
Henicophaps foersteri, Foerster's Bronzewing Pigeon	BB	–
Trichoglossus haematodus, Rainbow Lorikeet	K, S, T, W	B
Lorius hypoinochrous, Purple-bellied Lory	T, W	B, H
Charmosyna rubrigularis, Red-chinned Lorikeet	L	–
Charmosyna placentis, Red-flanked Lorikeet	S, T, W	H
Cacatua ophthalmica, Blue-eyed Cockatoo	–	B
Micropsitta pusio, Buff-faced Pygmyparrot	BB, T, W	–
Geoffroyus heteroclitus, Singing Parrot	S, T, W	B
Eclectus roratus, Eclectus Parrot	T, W	B, H
Cacomantis variolosus, Brush Cuckoo	T	–
Scythrops novaehollandiae, Channel-billed Cuckoo	–	B
Centropus violaceus, Bare-eyed Coucal	Ba, L, M	B
Centropus ateralbus, White-necked Coucal	M	B
Tyto aurantia, Golden Owl	Ti	–
Ninox odiosa, New Britain Boobook	L	–
Caprimulgus macrurus, Large-tailed Nightjar	BB, W	B
Hemiprocne mystacea, Moustached Treeswift	L, S, T, W	B
Collocalia esculenta, Glossy Swiftlet	–	B
Collocalia vanikorensis, Uniform Swiftlet	–	B
Collocalia spodiopygia, White-rumped Swiftlet	–	B
Alcedo atthis, Common Kingfisher	P, T, W	BR
Alcyone pusilla, Little Kingfisher	BB	–
Ceyx lepidus, Dwarf Kingfisher	S, T	B
Halcyon albonotata, White-marked Kingfisher	N, S	BR
Halcyon sancta, Sacred Kingfisher	L	B
Halcyon chloris, Collared Kingfisher	Ba, N, L, T, W	BR
Halcyon saurophaga, Beach Kingfisher	W	–

TABLE 1. Continued.

	Coultas	LeCroy and Peckover
Tanysiptera sylvia, White-tailed Paradise Kingfisher	S, T, W	—
Eurystomus orientalis, Dollar Bird	Ti	—
Aceros plicatus, Papuan Hornbill	—	B
Pitta erythrogaster, Blue-breasted Pitta	N, W	—
Lalage leucomela, Varied Triller	T	B, BR
Coracina papuensis, White-bellied Cuckooshrike	L, M, Si	B
Coracina lineata, Yellow-eyed Cuckooshrike	BB, L	—
Coracina tenuirostris, Cicada Bird	BB, L, M	—
Saxicola caprata, Pied Chat	L	—
Ortygocichla rubiginosa, Rufous-faced Thicket Warbler	BB, M	—
Rhipidura dahli, New Britain Rufous Fantail	M	—
Rhipidura leucophrys, Willie Wagtail	P, W	B, BR, H
Rhipidura rufiventris, White-throated Fantail	—	B
Monarcha verticalis, Bismarck Pied Monarch	G, S, T, W	—
Myiagra alecto, Shining Monarch	T	H
Myiagra hebetior, Lesser Shining Monarch	S, T, W	B
Pachycephala pectoralis, Golden Whistler	L, S, T, W	B
Artamus insignis, White-backed Wood-swallow	L, Ti	—
Aplonis cantoroides, Singing Starling	L	—
Aplonis metallica, Colonial Starling	L, W	B, H
Mino dumonti, Orange-faced Mynah	W	B, H
Dicrurus hottentottus, Spangled Drongo	L, M	B, BR
Corvus orru, Australian Crow	L	B, BR, H
Nectarinia jugularis, Yellow-bellied Sunbird	T, W	B, BR, H
Nectarinia sericea, Black Sunbird	—	B, BR
Myzomela erythromelas, Red-headed Black Honeyeater	Si	—
Myzomela cruentata, Red Honeyeater	N	—
Myzomela eques, Gray Honeyeater	T, W	B, BR
Philemon novaeguineae, Leatherhead	L	B, H
Dicaeum eximium, Beautiful Flowerpecker	M	B
Zosterops hypoxantha, Black-headed White-eye	L, M	B
Lonchura melaena, Buff-bellied Black Mannikin	K, L	—

* B = Bialla, Ba = Bagela, BB = Bangula Bay, BR = Balima River, G = Gaigeki, H = Hoskins, K = Kaiamu, L = Lobi, M = Malutu, N = Nakanai Mountains, P = Pasusu, S = Sege, Si = Sipa, T = Tarobi, Ti = Ti, W = Walo.

saw the species at Bialla up high in the trees in a forest patch. The white flesh around the eye and the whitish feet showed clearly. The bird gave a deep hollow "boop" about every 5 to 10 s and sometimes a "boop-boop" with the second syllable higher.

Centropus ateralbus. Common at Hoskins where it was very noticeable in the coconut trees, walking up the midribs of hanging coconut fronds, uttering soft chucking sounds, or gleaning in and around the coconuts and the center of the tree. This coucal was also prominent in the undergrowth of the overgrown coconut plantations.

Hemiprocne mystacea. Common at Bialla, where it was nesting. We saw it hawking for insects high in the air, particularly early and late in the day, but just before dark these treeswifts hawk only a meter or two above the grass, with a rapid, fluttering flight without the tail spread. The call was a high-pitched "scree."

We saw two nests, both very high in solitary dead trees in gardens, one on a horizontal limb with a loose piece of bark hanging below the sitting bird, and the other on the end of an almost vertical branch.

Collocalia esculenta. Not common, but we saw it three times with a flock of *C. spodiopygia.*

Collocalia vanikorensis. We positively identified this swiftlet once in a flock of *C. spodiopygia.*

Collocalia spodiopygia. The common swiftlet at Bialla, swirling slowly over the roads and the grass, often no more than 3 m up.

Ceyx lepidus. Photographed at Bialla. Wing, 62 mm; tail, 25; exposed bill, 35; tarsus, 11.5; weight, 23 g.

Halcyon sancta. Coultas collected this species on 3 December and was "convinced that a few individuals of this migrant species remain all of the year around." We saw it regularly at Bialla, the only bird to sit on the electric light wires. Solitary, and when a second bird landed nearby the first bird reared back, opened its wings halfway and flapped them, giving a short rattling call.

Halcyon chloris. Photographed at the Balima River. Wing 113 mm, tail 70, exposed bill 45, tarsus 18, weight 67 g. Not molting.

Eurystomus orientalis. Coultas saw a flock of five Dollar Birds at Ti and collected one. They were of the resident New Britain subspecies *crassirostris*; the widespread migrant race *pacificus* has not been collected on New Britain.

Aceros plicatus. Very common at Bialla, where once at 5:30 we counted 45 flying inland toward an area of cut-over forest.

Lalage leucomela. Seen feeding both by sallying out after insects from the tips of limbs in tall trees and by gleaning in the outer branches of trees.

Rhipidura leucophrys. We saw two active nests, both over salt water. One was on a partially submerged log about 100 m from shore and only about 2 ft above the water; the other was on the top of a stick protruding from the water near shore.

Rhipidura rufiventris. Twice we netted apparent pairs at Bialla. The weights varied from 13.5–17 g. One individual was in heavy molt and two others showed light body molt.

Myiagra hebetior. We photographed an immature at Bialla on 17 October. Wing 81 mm, tail 66, exposed bill 17.5, tarsus 20, weight 17 g. Iris dark brown; inside mouth orange; lower mandible black; upper mandible steel blue with black around nostrils, tip, and cutting edge; feet black. No molt. When the head feathers were raised there was a slight crest.

Pachycephala pectoralis. Not common at Bialla. A net-

ted female weighed 22.5 g, was not molting, and had the ovary enlarged. We did not see the Black-tailed Whistler (*P. melanura*).

Aplonis metallica. There was constant chattering and movement in and out of an active nest tree of this species at Bialla. One bird usually attended each nest opening, frequently displaying by flapping its wings. Individuals were seen feeding on cauliflorous orange fruits and young were fed both by regurgitation and by food carried in the bill. These birds were very acrobatic when feeding, often hanging upside down.

When a hawk (an immature *Accipiter*) appeared near the nest tree, the starlings "fell" out of the tree; the hawk disappeared into the tree and remained out of sight. It is not unusual for a bird of prey to frequent a nesting tree on New Guinea (pers. observ.).

Dicrurus hottentottus. An active nest seen on 13 October was a cup of vines or sticks on a steeply sloping limb in the lower branches of a very tall Kamarere tree near the Balima River.

Corvus orru. Very common at Bialla, where they were active and noisy at 5:30. At dusk they congregated in groups of 50 to 75 in the dead top of a tall tree by the shore. They remained for about 15 min, circling noisily in small groups around the tree, before leaving a few at a time until the tree was empty. At Hoskins about 100 crows roosted on the paved airstrip; just as it became dark they were mostly quiet, but with noisy periods.

At dusk on Balima River gravel, a silent group of at least 12 crows were bathing, flying about actively and landing in the Kamarere trees on the opposite shore.

When a crow gives its high-pitched "caw," the front of the folded wing presses against the bird's side as though squeezing out the sound. When cawing in flight, the wings are closed slightly and the bird glides.

Nectarinia sericea. At Bialla a display between two females lasted for several minutes. They sat about 200 mm apart in a patch of ginger and small trees, one on a nearly vertical tiny limb and the other on a horizontal limb. Both birds flicked their wings rapidly and sharply, and they bowed towards each other repeatedly with their heads turning in opposite directions and alternating each time, chittering all the while. One drove the other slowly backwards, both still displaying, until they had moved about a foot. When two males appeared, there was much chasing and all four birds flew away.

Myzomela eques. Two netted birds weighed 14.5 and 16.5 g.

Philemon novaeguineae. One seen sitting on a globular nest of vines and/or grass suspended from the outer branches of a tree and concealed by leaves. One call was recorded as a "chong."

Lonchura melaena. Coultas collected this mannikin in a small patch of grassland not over 5 m^2 on the mountainside at 1,200 m. Ken Francis told us that finches inhabited the grass at Bialla at certain seasons, but none were present during our stay.

We were uncertain of the identity of the following five species and have omitted them from the analysis:

Tringa sp. Either *incana* or *brevipes* was seen along the Balima River.

Chlidonias hybrida. An adult tern in non-breeding plumage, the size of *S. hirundo* but without a deeply forked tail, was seen flying up the Balima River on 13 October.

Cacomantis castaneiventris. A cuckoo seen from the back was about the size of *C. variolosus* but had the tail barred brown and black, without any white visible on the feather edges; the central tail feathers all black; a gray head and gray-brown wings and back; and yellow around the eye. *C. castaneiventris* has not been collected on New Britain and its presence needs to be confirmed.

Hirundo tahitica. We briefly saw a swallow with a dark throat, almost certainly this species, flying over the Balima River.

Ducula rubricera. We saw what was probably this species at Bialla.

DISCUSSION

We report a total of 100 species for the Kimbe Bay area, 44 of which were seen and/or collected by Coultas and by us. Most of these have adapted well to human presence, occurring either on the airstrips, in the towns and gardens, or in coconut trees. Exceptions to this are species that we saw only in patches of disturbed forest, and then not commonly: *Henicopernis infuscata, Accipiter novaehollandiae, Ducula finschi, Chalcophaps stephani, Centropus violaceus, Alcedo atthis* (along forested riverbanks), *Halcyon chloris, Halcyon albonotata, Pachycephala pectoralis, Dicrurus hottentottus,* and *Myzomela eques.*

We daily walked through and alongside the oil palm plantations and the only bird we saw was *Chalcophaps stephani,* once. An unidentified hawk flew up from the road through the plantation once and we heard a third, unidentified, species once. Oil palm monoculture is a recent addition to the landscape, the trees having been introduced from Africa. At present these plantations are an ornithological desert and it will be interesting to see whether local birds adapt to them. Coconuts, however, have been grown here for a long time (and may be endemic to the area; Paijmans 1976), and these plantations commonly have parrots, White-necked Coucals, crows, and Yellow-bellied Sunbirds. Moreover, the unusually heavy undergrowth in the coconuts of the Kimbe Bay area was attractive to numerous small passerines.

Our finding *Gymnophaps albertisii* to be common in garden trees and flying over Bialla was the most surprising observation of our stay. The presence of these pigeons was probably dependent on the fruiting of the trees in which they were feeding. This species was formerly considered a mountain bird and has been reported at, or near, sea level only rarely (Rand and Gilliard 1967). Recently, more frequent sightings of these birds at sea level in New Guinea and the Solomons (Diamond, pers. comm.; Clapp 1979) and our observations at Bialla indicate that their movements are regular, the birds descending to sea level to feed at certain seasons, and that they are not "obligately montane" as suggested by Mayr and Diamond (1976).

Most collectors and observers in New Britain have commented on the scarcity of small birds in the undergrowth, and our own expe-

rience is similar. This scarcity tended to be confirmed by our netting results, with an average per net often less than one bird per day, compared to similar second-growth habitat on mainland New Guinea with an average of three to four birds per day per net (pers. observ.). This is higher than the number of birds per net day obtained by Diamond (1970; Table 1) in coastal lowland rainforest but follows the pattern of lower net yields in similar habitat on islands than on the mainland of New Guinea. We did not encounter the small flocks of mixed species reported by Orenstein (1976). This may be a seasonal phenomenon, but it may also be a matter of altitude as Orenstein (pers. comm.) told us that he did not encounter the mixed flocks at sea level.

Coultas collected specimens of 38 species and heard one (*Tyto aurantia*) that we did not see. Twenty-one of these are either birds of the higher forest (*Accipiter brachyurus, Ducula melanochroa, Charmosyna rubrigularis, Rhipidura dahli,* and *Myzomela cruentata*) or secretive birds confined to heavy forest or forested swamp (*Casuarius bennetti, Rallus insignis, Poliolimnas cinereus, Amaurornis olivaceus, Ptilinopus rivoli, Ducula rubricera, Reinwardtoena browni, Henicophaps foersteri, Gallicolumba beccarii, G. jobiensis, Tyto aurantia, Ninox odiosa, Tanysiptera sylvia, Pitta erythrogaster, Coracina tenuirostris,* and *Ortygocichla rubiginosa*). The remainder are common birds that might have been expected in the areas we visited but were for the most part probably either thinly distributed or of local or seasonal occurrence. October 1932 and October 1979 differed markedly in climatic conditions. Coultas visited during the rainy season, whereas the rains had not yet begun at the time of our visit, the dry season being much prolonged.

We see no reason to believe that any of the 39 species recorded by Coultas but not by us has become extinct in the area; seven of these species were recently seen or heard by Orenstein (1976, pers. comm.). The differences may be explained by our short stay, our inability to visit certain habitats, and by the seasonality of some species.

More surprising to us were our records of 17 species not collected by Coultas. Four of these were shorebirds and two were terns, probably of sporadic occurrence along the shore. The remaining 11 species are harder to explain. *Nycticorax caledonicus, Haliastur indus, Macropygia nigrirostris, Cacatua ophthalmica, Scythrops novaehollandiae, Collocalia esculenta, C. vanikorensis, C. spodiopygia, Aceros plicatus, Rhipidura rufiventris,* and *Nectarinia sericea* are all common to abundant widespread species and easily seen. Coultas collected them elsewhere both before and after his stay in the Bangula Bay area. It would have been uncharacteristic of Coultas not to collect a record specimen, as he did for other common species in this area and elsewhere, and he did not mention these species in his notes. We nevertheless conclude that he chose to overlook them, as alternative explanations seem unlikely. These species are probably more common and evident in the currently large open spaces of Bialla and during the dry season. Orenstein (1976, pers. comm.) did not find 8 of these 17 species, which implies that a seasonal element may be important.

Beehler (1978) studied avifaunal changes in the Wau Valley on New Guinea over a period of 44 years. He found evidence that six species had moved into the disturbed habitats during those years and that eight other species had probably colonized the area from outside during the 10 years between the original discovery of gold and the first ornithological survey. In contrast, we have no compelling reason to think that any species has colonized the Kimbe Bay area since Coultas collected. While there was no coconut monoculture before his visit, there was disturbed habitat (native gardens and second growth) and some natural grassland areas on rocky soil.

New Britain birds have been able to colonize over water and in some cases either to expand their altitudinal ranges—and perhaps their ecological tolerances as well—or to shift seasonally. This capability has been a great advantage to them in areas where lowland forests are being removed at a tremendous rate. With human alteration of the environment, some of them have perhaps even increased in abundance (e.g., the 11 common species listed above). This situation may continue, however, only so long as patches of second growth forest remain, for few species have adapted to coconut monoculture, particularly in well-kept plantations, and none has adapted to the more recent oil palm plantings.

The birds that seem likely to suffer most from deforestation are the 21 species confined to heavy forest. Particularly subject to such effects would be the New Britain endemics such as *Rallus insignis, Reinwardtoena browni, Henicophaps foersteri, Ninox odiosa* and *Ortygocichla rubiginosa.* Information on their current status is urgently needed.

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RECENT PUBLICATIONS

Report of the 1979 Greenland White-fronted Goose Study Expedition to Eqalungmiut Nunât, West Greenland.—Edited by A. D. Fox and D. A. Stroud. 1981. Greenland White-fronted Goose Study, Aberystwyth. 319 p. Paper cover. £ 9.50 postpaid. Source: National Library of Wales, Aberystwyth, Dyfed, Wales, U.K. One subspecies of White-fronted Goose (*Anser albifrons flavirostris*) breeds on the west coast of Greenland and winters in Ireland, Scotland, and Wales. A decline in one of the Welsh populations during the 1960's, coupled with virtual ignorance of the summer ecology of the geese, motivated an expedition from the University College of Wales. This volume is its complete report, including not only all the scientific investigations but also a full narrative of the expedition and detailed reports on its logistics, supplies, and equipment. Nearly one-third of the pages are devoted to the studies of the geese: breeding biology, food, predation, plumage variation, migration, et al. Brief reports treat other breeding birds, and investigations of mammals, fish, land arthropods, plants, and meteorology. In total, the document offers a wealth of new information about the geese and their arctic ecosystem. While the scientific findings carry the flag, one may also enjoy the account of the expedition itself and gain much invaluable advice on provisioning similar ventures. Maps, photographs, charts, drawings, references.

Japanibis und Japanische Nachtigall als Beispiel zweier Pole im Naturverständnis der Japaner.—Ulrike Thiede. 1982. Mitteilungen Bd. 90, Gesellschaft für Natur- und Völkerkunde Ostasiens e.V., Hamburg. 190 p. Paper cover. No price given. Source: author, Fliederstr. 2, D 428, Borken, West Germany. To the Western eye, there appears to be a discrepancy between the reputation of Japanese people as nature-lovers and their actual attitudes and practices. What does "nature" mean to the Japanese? Thiede, a German zoologist, opens her scholarly examination with a survey of the Japanese view of nature, as given in modern European and Japanese writings. She then addresses the question by way of two birds that have engendered contrasting human responses: the Japanese Bush-Warbler (*Cettia diphone*) exemplifies the traditional/literary attitude toward birds, while the Crested Ibis (*Nipponia nippon*) represents the rural attitude. Both species are considered from scientific as well as literary and cultural aspects. The drastic decline of the ibis during the past century has reversed feelings toward it, and this endangered species has become an important impetus for nature protection in Japan. Maps, references.