ON THE BIRDS OF THE ISLANDS OF MUNA AND BUTON, S. E. CELEBES

by

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INTRODUCTION

Only scarce information is available about the avifauna of the islands of Muna and Buton, S. E. of Celebes.

RUMPHIUS (in FR. VALENTIJN: Oud en Nieuw Oost-Indiën 3, p. 297-329, 1726) was the first to mention a few birds from Buton. The first visit by a naturalist to these islands on which some birds were collected was paid in 1793 by LABILLARDIÈRE, one of the naturalists who accompanied D'ENTRECASTEAUX's expedition in search of the lost ship "La Pérouse". Obviously, parties landed on both islands during a passage through the Strait of Buton, between Buton and Muna, which passage took eighteen days. The material collected during this time seems to have been treated rather carelessly as far as locality is concerned. Most material was considered to have come from New Caledonia; LABILLARDIÈRE himself described how he got the typical Buton bird *Streptocitta albicollis* in a New Caledonian forest! The puzzle that arose by this circumstance was the cause of many troubles in fixing the type-locality of some species. The next zoologist who paid a visit to Buton was SALOMON MÜLLER in 1828. He visited Buton and a small island directly off-shore, just opposite the largest village in Buton, known as Buton or Bau-bau. In his report various species have been mentioned for the first time from the Celebes region. The parrots mentioned by MÜLLER were live birds, bought in the village. FINSCH considered therefore all parrots brought by MÜLLER from Buton as certainly not belonging to the Buton avifauna!

In our century HEINRICH KÜHN was the first to visit Buton again (1901). A report of his bird collection was published by HARTERT (Nov. Zool. 10, 1903, p. 18-38). Shortly after him Dr JOHANNES ELBERT visited

1) This study was begun while the author was holding a curatorship at the Museum Zoologicum Bogoriense, Bogor (Buitenzorg), Java.—Ed.

both Muna and Buton during his Sunda-expedition, made in charge of the "Verein für Geographie und Statistik zu Frankfurt am Main" (1909). ELBERT was accompanied by the Indonesian collector MOHARI from the Zoological Museum at Buitenzorg, who was responsible for nearly all specimens collected. The bird collection has been divided between the Buitenzorg Museum and the Senckenberg Museum at Frankfurt; some of the specimens are now in the museums at Amsterdam and Leiden. As is mentioned by ELBERT in his elaborate report of the expedition [Die Sunda-Expedition des Vereins für Geographie und Statistik zu Frankfurt am Main, 1, 1911, p. 143-232 (birds)], the birds were entrusted to H. GRAF VON BERLEPSCH, but nothing was ever published by him. The ELBERT collection had — up till now — only been mentioned by ELBERT himself in his report, referring to some of the names given by VON BERLEPSCH. In 1926 RENSCH mentioned a few of ELBERT's specimens and described a new subspecies of Cinnamon Dove from Buton (*Turacoena manadensis elberti*). Finally, STRESEMANN mentioned many birds from the ELBERT collection, preserved in the Senckenberg Museum, in his "Vögel von Celebes" (J. f. O. 87, 1939 - 89, 1941) and this work contains many new records for both islands. As only a list of part of the material was available to him, his records on the ELBERT collection are rather incomplete. This is merely due to the fact that the bird collection does not seem to have been equally divided between Buitenzorg and Frankfurt. Shortly after ELBERT's expedition ROY CHAPMAN ANDREWS visited some of the smaller islands in Strait Buton in Dec. 1909, being on a collecting expedition for the American Museum of Natural History, New York. Nothing has been published about this collection as a whole, but Dr ERNST MAYR kindly provided us with a list of specimens, which, however, have never been critically examined. In 1944 MAYR described a new race of fruit-pigeon from Tobian Island, northern Buton Strait, on specimens collected by ANDREWS (*Ducula aenea pallidinucha*, Bull. Am. Mus. Nat. Hist. New York 83, p. 148).

In 1948 Mr G. A. L. DE HAAN, collecting for the Zoological Museum at Amsterdam, the Museum Zoologicum Bogoriense at Bogor (Buitenzorg), and the collection of Mr J. G. VAN MARLE (Bussum, Netherlands), visited Muna and Buton during two months. Collections were made on Buton from September 19-29 and from October 13-20, and on Muna from October 1-10. Mr DE HAAN, who is an experienced collector, however, lacking on his trip the assistance of a good preparator, had a lot of trouble, not only in obtaining, but especially in preserving his specimens. Therefore his collection contains many skins that are not as good as he had wanted. Nevertheless, this collection of 320 specimens, representing 61 species, as also a lot of

elaborate field notes, brought many new records and valuable information about this very insufficiently known area. On Buton DE HAAN collected near Bau-bau and at the mouth of the small river Napa (also called Wamingkoli), on the S.W. coast of the island. On Muna DE HAAN collected on the south coast near the villages Labasa and Wamingkoli (not to be confounded with the Wamingkoli River on Buton!).

In the present study the authors have revised that part of the material collected during the ELBERT expedition that is preserved in the Museum Bogoriense (E.) and they have critically examined the new material collected by DE HAAN (H.). As the authors are working with half of the world between them, each of them studied a number of groups or species independently. The author responsible for each section can be found by his initials at the end of that section, i.e. VAN BEMMEL (B) and VOOUS (V). The authors have tried to cite all literature on the occurrence of a species in Muna and Buton under the heading of each section, directly following the original description. Species obtained by other collectors, being not represented in the present material, had to be left out, because no critical examination proved to be possible at the moment.

It proved necessary to describe the following three subspecies as new:

Aceros cassidix brevirostris VAN BEMMEL, subsp.n.
Accipiter rhodogaster butonensis VOOUS, subsp.n.
Treron pompadora dehaani VOOUS, subsp.n.

The authors are indebted to Dr J. STEINBACHER from the "Naturmuseum Senckenberg", Frankfurt, Germany, for the loan of several important specimens from the ELBERT collection and for useful information on specimens under his care. Prof. Dr E. STRESEMANN (Berlin) kindly assisted with the racial identification of the specimens of *Malacocincla celebensis* and *Collocalia vanikorensis*. The authors are also indebted to Dr W. MEISE (Berlin) for the loan of material.

The second author thankfully mentions financial aid by the "GRESHOFF's Rumphius fonds", enabling the Zoological Museum at Amsterdam to contribute in paying the costs of DE HAAN's collecting trip.

THE ISLANDS OF MUNA AND BUTON

"The surface of the islands of Muna and Buton consists mainly of lifted coral-chalk beds, but as a results of extensive deforestation fertile soil has disappeared from many places. Consequently the islands made a very sterile and arid impression, being covered with dry savannahs or

grassfields, where "alang-alang" (*Imperata spec.*) and "tembelekan" (*Lantana camara*) and trees of the genus *Bauhinia* were the dominant plants. Only there where a small river reaches the coast enough fertility is left for the growing of fairly good coconut-plantations. Large evergreen trees with a luxurious foliage, such as "djambu monjet" (*Anacardium occidentale*), "waringins" or fig-trees (*Ficus spec.*), "tjemara" (*Casuarina spec.*), *Tamarindus indica* a.o. surrounded most of the native villages ("kampongs") and showed a rather rich bird life. To the north of Labasa, Muna, the savannah gradually changes into a real "djati"-forest (*Tectona grandis*), with *Lantana camara* as its most conspicuous undergrowth.

The yearly dry season of the islands sets in at about July and is ended by the middle of November; the yearly total of rain is 1648 mm on Muna and 1748 mm on Buton. During the driest month less than 30 mm rain is recorded" (DE HAAN).

ZOOGEOGRAPHY

The avifauna of the islands of Muna and Buton is typical Celebesian. Not one species is known from these islands that does not occur in Celebes. Such a Papuasian element as *Accipiter torquatus wallacei*, occurring in the nearby Tukang Besi Islands, does not seem to have reached Muna and Buton. On the other hand the Thriller, *Lalage sueurii*, which is known to have reached the southern peninsula of Celebes (Makassar) from the chain of Lesser Sunda Islands, was also found by DE HAAN on Buton. Its ecological and reproductive relation to the Celebesian *Lalage leucopygialis*, which was found by ELBERT on Muna, would be most instructive to know.

Bird life on Muna and Buton is rather poor in comparison with the large number of species occurring in Celebes. At present 60 species of breeding birds are known from Muna, 66 from Buton, and 78 from the islands combined. The southeastern peninsula of Celebes has 161 known breeding species (STRESEMANN, Ibis, 1936, p. 356-369), only 42% of that number occurring in Muna and Buton. The 16 endemic genera known from Celebes (STRESEMANN, 1939) are represented by 3 of them in Muna and Buton (= 19%): *Nesocorax* (*typicus*), *Streptocitta* (*albicollis*), *Scissirostrum* (*dubium*). From 84 known endemic Celebesian species 33 (= 39%) have been recorded from Muna and Buton. Muna and Buton have also 7 "endemic" races of their own: *Aceros cassidix brevirostris, Phoenicophaeus calorhynchus rufiloris, Accipiter rhodogaster butonensis, Turacoena manadensis elberti, Treron pompadora dehaani, Ptilinopus melanospila aurescentior, Ducula aenea pallidinucha.* However, it seems likely that these races represent nothing but terminal ends of several

clines running from C. Celebes through the S. E. peninsula to Muna and Buton, eventually reaching the Tukang Besi Islands, because in most instances tendencies towards the "Muna-Buton" characters have been noticed in specimens from S. E. Celebes.

KÜHN collected 18 species of apparent breeding birds on Buton; the present ELBERT collection contained 47 breeding species from Muna and 56 from Buton. To these lists DE HAAN could add 13 new names for Muna and 6 for Buton.

Additions to the list of Muna:

Lonchura ferruginea brunneiceps
Cisticola juncidis constans
Collocalia vanikorensis aenigma
Alcedo atthis hispidoides
Spizaëtus lanceolatus
Elanus caeruleus hypoleucos
Haliastur indus ambiguus
Pernis celebensis celebensis
Ardea sumatrana sumatrana
Rallus torquatus remigialis
Macropygia amboinensis albicapilla
Turnix sylvatica subspec.
Coturnix chinensis lineata

Additions to the list of Buton:

Lonchura ferruginea brunneiceps
Dicaeum aureolimbatum aureolimbatum
Lalage sueurii sueurii
Hirundo tahitica javanica
Eurystomus orientalis connectens
Spizaëtus lanceolatus

DE HAAN collected also 2 new migrants on Muna and 5 on Buton (among which the Australian migrant *Stiltia isabella* and the rare *Charadrius asiaticus veredus*), making the total of known palearctic migrants 11 and of Australian migrants 2.

It may be of interest to know what species DE HAAN found to occur in the greatest numbers. He has been careful not to be misled by conspicuous habits and call-notes. According to him the following species showed the greatest abundance during his visit: *Collocalia vanikorensis, Dicaeum celebicum, Dicaeum aureolimbatum, Zosterops lutea (intermedia), Artamus leucorhynchus, Aplonis minor.* To the rarest or least numerous species DE HAAN reckons: *Basilornis celebensis, Alcedo atthis, Pelargopsis melanorhyncha, Falco tinnunculus, Haliaëtus leucogaster, Ciconia episcopus, Ardea sumatrana.*

Although we are safe stating that at present the commoner species of birds from Muna and Buton are known, we can also be sure that other species are still awaiting their discovery to ornithological science. *Aethopyga siparaja, Circus assimilis, Haliaëtus leucogaster* (vernacular name Kwéa, Buton), *Tyto* spec., having been observed by DE HAAN, but not collected, could therefore not be included in our list, owing to lack of

reference specimens. The mountains of N. Buton, rising to above 1000 m altitude, seem to be ornithologically totally unknown. Here, the Anoa or Dwarf Buffalo has found one of its last retreats and it is very likely that ornithological discoveries can here be made. Perhaps, these mountains are also the regular haunts of the very rare Black Cuckoo, *Surniculus lugubris musschenbroeki*, of which ELBERT fortunately got one adult specimen, not previously recorded in the literature.

Corvus enca celebensis STRESEMANN

Corvus enca celebensis STRESEMANN, 1936, Ibis (13) VI, p. 368.— Rurukan, N. Celebes.

Corvus enca, HARTERT, 1903, Nov. Zool. 10, p. 32.— Buton.

Corvus enca celebensis, STRESEMANN, 1940, J.f.O. 88, pp. 15-16.— Buton.

First record. — Buton, KÜHN 1901.

Material. — Buton, Bau-bau, 4 ♂ ad., 21-24.ix.1948 (H.); 1 ♂ imm., 21.ix.1948 (H.); 1 ♀ ad., 24.ix.1948 (H.).

Measurements. — Buton, 4 ♂ ad., wing 290, 282, 268 (moult), 263 (moult); tail 158, 152, 147 (moult), 145 (moult); culmen 54.5, 53, (53), —; 1 ♂ imm., wing 260; tail 154; culmen 50; 1 ♀ ad., wing 284; tail 153; culmen 51.

Weight. — 4 ♂ ad., 361, 356, 344, 342 gr; 1 ♂ imm., 331 gr; 1 ♀ ad., 324 gr. (H.)

Gonads. — Testes of 4 ♂ ad., 2 × 5, 2 × 5, 2 × 4, 1 × 3 mm; largest egg-follicle of 1 ♀ ad., 0.5 mm. (H.)

Colours. — Iris darkbrown, bill and feet black. (H.)

Discussion. — Comparing Buton birds and 6 specimens from different parts of Celebes with 10 specimens from Java I must agree with STRESEMANN (1940) that there is a slight but constant difference in shape of the bill between Celebes (+ Buton) birds on one side and Javan birds on the other hand. Birds from Buton and Celebes moreover are somewhat blacker and of a duller tinge than birds from Java. There are no differences between Celebes and Buton birds. I want to point out once more the difference between birds from the Sula Is. and Celebes (vide VAN BEMMEL, Treubia 1948, 19, pp. 336, note 1). Sula birds do agree much more with birds from Java, both in colour and shape of the bill, than they do with birds from Celebes.

Distribution. — The race *celebensis* occurs in Celebes and Buton. The species *C. enca* occurs in Malaysia, Philippines, Celebes, Buton, Sula Is., Tukang Besi Is., Ceram and most probably in Flores (*C. florensis*). The species has not yet been collected in Muna.

Vernacular name. — Tonka (Buton).

Field notes. — All specimens have been collected in a village near the seashore.

The tonka was not a common bird in Buton, but rather conspicuous by its noisy behaviour. Shy but inquisitive. One crow being shot, its comrades called together the whole neighbourhood and crows from miles around came to the rescue. (H.)

(B)

Nesocorax typicus typicus (BONAPARTE)

Gazzola typica BONAPARTE, 1853, Compt. Rend. 37, p. 823.— "Nouvelle Calédonie" err.! = Buton, cf. HARTERT, 1903, Nov. Zool. 10, p. 31.

Gazzola typica, MEYER & WIGLESWORTH, 1898, Birds of Celebes 2, p. 584.— Buton or Muna.

Gazzola typica, HARTERT, 1903, Nov. Zool. 10, p. 31.— Buton.

Gazzola typica, ELBERT, 1911, Die Sunda-exp. Ver. Geogr. Statist. Frankfurt 1, p. 148.— Muna.

Nesocorax typicus typicus, STRESEMANN, 1940, J.f.O., 88, pp. 17-18.— Buton.

First record. — Muna, LABILLARDIÈRE, 1793, or ELBERT 1909; Buton, LABILLARDIÈRE 1793 or KÜHN 1901.

Material. — Muna, 1 ♂ ad., 2 ♀ semi-ad., vii-viii.1909 (E.); Buton, 3 ♂ semi-ad., 2 ♀ imm., viii.1909 (E.).

Measurements. — Muna, 1 ♂ ad., wing 221; tail 114; culmen 42; 2 ♀ semi-ad., wing 207, 202; tail 122, 121; culmen 41, 40; Buton, 3 ♂ semi-ad., wing 211, 209, 203; tail 122, 122, 119; culmen 43.5, 41, 40; 2 ♀ imm., wing 195, 193; tail 119, 114; culmen 42, 39.

Discussion. — There has been much disaccord about the typical locality and the first record in Muna and Buton (vide MEYER & WIGLESWORTH l.c., HARTERT l.c., STRESEMANN l.c., MEINERTZHAGEN Nov. Zool 1926, 33, p. 73). I think the best way is to accept HARTERT's designation of the type locality. It is queer that ELBERT's own record from Muna has been overlooked by later authors. AMADON (Am. Mus. Nov. 1944, 1251, p. 15) included the genus *Nesocorax* in *Corvus*. STRESEMANN (l.c. p. 16) maintained the genus *Nesocorax* RILEY 1921 with some hesitation on behalf of the biology which seems to approach that of *Lycocorax*. I think this is so important that I follow here the example of STRESEMANN.

Distribution. — Celebes, Buton, Muna. Nearest relative seems to be *Nesocorax unicolor* (ROTHSCH. & HARTERT) from Banggai, but I am not acquainted with this form that even might be a subspecies of *N. typicus*.

(B)

Oriolus chinensis macassariensis HARTERT

Oriolus chinensis macassariensis HARTERT, 1925, B.B.O.C. 45, p. 90.— Nomen novum for *Oriolus celebensis meridionalis* HARTERT, 1896, Nov. Zool. 3, p. 155, terra typica: Indrulaman, S. Celebes, nec *Oriolus meridionalis* BREHM, 1845.

Oriolus chinensis macassariensis, STRESEMANN, 1940, J.f.O. 88, p. 20.— Buton, Muna, Kabaëna.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, 1 ♂ ad., 1 ♀ imm., vii-viii.1909 (E.); Muna, Labasa, 1 ♂ ad., 1 ♀ ad., 1 sex inc. imm., 7.x.1948 (H.); Buton, 1 ♂ ad., 3 ♀ ad., viii.1909 (E.); Buton, Bau-bau, 3 ♂ ad., 23.ix.-16.x.1948 (H.).

Measurements. — Muna, 2 ♂ ad., wing 140, 132; tail 103, 95; culmen 28.5, 28; 1 ♀ ad., wing 132; tail 97; culmen 27; 1 ♀ imm. wing 140; tail 110; culmen 26; 1 sex inc., wing 133; tail 100; culmen 26.5. Buton, 4 ♂ ad., wing 147, 142, 141, 141; tail 110, 107, 102, 101; culmen 29.5, 29, 28.5, 28; 3 ♀ ad., wing 143, 138, 138; tail 105, 104, 101; culmen 29, 28.5, 28.

Weight. — 4 ♂ ad., 80, 79, 74, 74 gr; 1 ♀ ad., 77 gr; 1 sex inc. imm., 71 gr. (H.)

Gonads. — Testes of 4 ♂ ad., 6 × 10, 5 × 9, 3 × 5, 4 × 2 mm; largest egg-follicle of 1 ♀ ad., 1 mm. Breeding season seems to have started in September. (H.)

Colours. — Iris red or reddish brown in males and female entering breeding season, brown in immature specimen. Bill pink in males, grey in female and immature specimens, feet black or dark grey. (H.)

Discussion. — H. C. SIEBERS considered birds from the ELBERT collection as *celebensis* (unpublished note). The birds from Buton and Muna were put in the subspecies *macassariensis* by STRESEMANN (l.c.). Still I think this subspecies is hardly distinguishable from *celebensis* WALDEN. STRESEMANN has pointed to the difference in the black band over the nape, which, according to him, is mostly open in N. Celebes, always closed in S. Celebes. Now in the collection M. Z. Bogor there are 9 specimens from N. Celebes only one of which has an open nape-band. On the other hand a female from Makassar in our collection has a widely opened nape-band! Four Buton birds and two Muna birds do show a broadly closed nape-band which is mixed with yellow in the nape, the same is the case with one Muna bird. In another bird from Muna the nape-band is widely open.

In general colour most of the Buton and Muna birds do approach topotypical *macassariensis*. One bird from Buton equals *oscillans* (Tukang Besi Is.) in deep yellow colour, and the same is the case with one bird from Makassar in our collection, but both are smaller and perhaps a trifle more greenish. On the whole Buton-Muna birds are somewhat more

black than *celebensis*. In our series birds from Muna are on the average somewhat smaller than birds from Buton, but there is clearly an overlapping. So, for the moment, I think it best to retain the race *macassariensis* both for Buton and Muna.

Distribution. — Vide STRESEMANN, J.f.O. 1940, 88, pp. 18-20.

Vernacular name. — Kororio (Buton and Muna).

Field notes. — The birds collected in Buton by DE HAAN are all from a village near the seashore. Those from Muna were collected in teak-forest. Orioles could be observed everywhere, but never were abundant. Its melodious voice could be heard in the early morning till eight o'clock and after five o'clock in the afternoon. Its favourite habitat were village-gardens and *Casuarina*-trees. (H.) (B)

Aplonis minor minor (BONAPARTE)

Lamprotornis minor BONAPARTE (ex ms. S. MÜLLER), 1850, Conspectus Avium I, p. 417.— Timor.

Aplonis minor montosus, STRESEMANN, 1940, J.f.O. 88, p. 22.— Muna.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, 2 ♂, vii-viii.1909 (E.); Buton, 2 ♂ ad., viii.1909 (E.); Buton, Bau-bau, 4 ♂ ad., 19.ix-19.x.1948 (H.); 2 ♂ sub-ad., 22.ix-16.x. 1948 (H.); 2 ♂ imm., 25.ix-14.x.1948 (H.); Buton, 2 ♀ ad., viii.1909 (E.); Buton, Bau-bau 2 ♀ ad., 13-14.x.1948 (H.); 3 ♀ sub-ad., 15-18.x.1948 (H.); Buton, 1 ♀ imm., viii.1909 (E.); Buton, Bau-bau, 1 sex inc., 19.x.1948 (H.)

Measurements. — Muna, 2 ♂ ad., wing 99, 98; tail 63, 61; culmen 15, 15; Buton 6 ♂ ad., wing 104, 103, 103, 101.5, 99, 99; tail 68, 66, 66, 65, 65, 64; culmen 15.5, 14.5, 14.5, 14, 14, —; 2 ♂ sub-ad., wing 96, 93; tail 60, 59; culmen 16, 14.5; 2 ♂ imm., wing 98, 95; tail 55,52; culmen 14, —; 4 ♀ ad., wing 101, 98, 98, 96.5; tail 68, 62, 62, 61; culmen 15, 15, 14, 14; 3 ♀ sub-ad., wing 101, 97, 92; tail 59, 59, 58; culmen 15, 15, 13.5; 1 ♀ imm., wing 91.5; tail 62; culmen 14.5; 1 sex inc. imm.; wing 95; tail 54; culmen 14.

Weight. — Buton, 4 ♂ ad., 50, 49, 44, 44 gr; 2 ♂ sub-ad., 48, 43 gr; 2 ♂ imm., 47, 42 gr; 2 ♀ ad., 52, 42 gr; 3 ♀ sub-ad., 49, 40, 38 gr; 1 sex inc., 46 gr. (H.)

Gonads. — Buton, testes of 3 ♂ ad., 6 × 11, 4 × 11, 5 × 8 mm; 2 ♂ sub-ad., 4 × 9, 4 × 7 mm; 2 ♂ imm., 1 × 2, 1 × 2 mm; largest egg-follicle of 2 ♀ ad., 1 mm; of 2 ♀ sub-ad., 1 mm. Both adult and sub-adult birds are in breeding condition. (H.)

Colours. — Iris red in adult birds, light red in sub-adult birds, brown in immature birds. Bill and feet black. (H.)

Discussion. — STRESEMANN (l.c.) recorded birds from Muna in the ELBERT collection as *A. minor montosus* RILEY (1921). STRESEMANN has not seen birds from Buton. All the birds from Buton and Muna, available to me at the moment, can only stand as *Aplonis minor minor*. All of them do show a distinct purple gloss on the whole of the throat and a sometimes distinct, sometimes indistinct glossy purple band on the nape. But even in topotypical *minor* this glossy purple band can be indistinct. An adult bird from Lombok even has no purple gloss at all on the nape! The throat in our Celebes material is much greener, with less purple gloss than in Buton or Muna birds or with no purple gloss at all. In my opinion birds from Tanah Djampea I., Kalao Tua I. and Kaju Adi I. should also be considered as true *minor* BP.

The late Dr M. BARTELS (in litt., Sept. 1941) drew my attention to the fact that *Aplonis minor* presents an interesting case of interinsular migration. In Java the birds do appear in the end of May and leave again in September. There are no breeding records from Java. My late friend Mr C. P. J. DE HAAS collected *Aplonis minor* systematically on Bandjarwangi Est., Garut, W. Java. Birds could be collected there only in May, June and July. In our collection one specimen from Mount Tjerimai (June), one from Tengger Mts., E. Java (July) and one from Mt Lawu (August) are present. Vide also CHASEN (Treubia 1940, 17, p. 265).

Now the birds from Buton collected by DE HAAN are all in breeding condition, so they cannot be migrants. Still, they are typical *minor*. STRESEMANN, however, found a great variability in birds from S. Celebes (l.c.). So there might be a possibility that in S. Celebes a resident race (*A. minor montosus*) occurs side by side with a migratory race (*A. m. minor*). In my opinion this possibility is supported by the fact mentioned by HEINRICH (in STRESEMANN l.c.) "dass man gelegentlich grosse Schwärme von 50 bis 100 Stück antrifft", *Aplonis minor* as a rule being found in pairs or only in small families! On the other hand RENSCH is of another opinion (Mitt. Z. M. Berlin 1931, 17, p. 593). Most probably only part of *A. minor* from the Lesser Sunda Is. is migrating West during the dry season.

Distribution. — The species *A. minor* occurs in the Lesser Sunda Is., S. Celebes and interjacent islands. Migrating West as far as Western Java.

Vernacular name. — Nipuo (Buton), Lipuo (Muna).

Field notes. — Collected by DE HAAN in a village near the seashore, often in a banyan tree.

Glossy Starlings could be found in fruit-bearing banyan-trees, during the whole day, where they assembled in rather large flocks. (H.)

(B)

Basilornis celebensis GRAY

Basilornis celebensis GRAY, 1861, P.Z.S. 1861, p. 184.— Menado & Makassar, Celebes.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material.— Muna, 4 ♂ ad., 1 ♂ imm., 3 ♀ ad., 1 ♀ imm., vii-viii.1909 (E.); Muna, Labasa, 1 ♀ ad., 2.x.1948 (H.); Buton, 1 ♀ ad., viii.1909 (E.).

Measurements. — Muna, 4 ♂ ad., wing 130, 127, 127, 124; tail 93, 91, 88, 87; bill from gape 26.8, 26.4, 25.5, 25.1; 1 ♂ imm., wing 125; tail 89; bill from gape 26.4; 4 ♀ ad., wing 127, 124, 123, 122; tail 87, 85, 83, 76; bill from gape 26.8, 26.7, 23.7, 23.4; 1 ♀ imm., wing 114, tail 73, bill from gape 26.2. Buton, 1 ♀ ad., wing 123; tail 91; bill from gape 24.6.

Weight. — Muna, 1 ♀ ad., 79 gr. (H.)

Gonads. — Largest egg-follicle of 1 ♀ ad., 2 mm. (H.)

Colours. — Iris darkbrown, bill yellowish grey, feet yellow. (H.)

Discussion. — Just as in *Streptocitta a. albicollis* there seems to be much variation in size. The smallest female of the series, collected by DE HAAN, is fully adult.

The immature birds are moulting. Moult is complete, as suggested by STRESEMANN (J.f.O. 1940, 88, p. 24).

Distribution. — Celebes, Buton and Muna. One very closely related species (*B. galeatus*) in Banggai Is. and all Sula Is., another (*B. corythaix*) in Ceram. I am not sure whether the differences are of specific value.

The occurrence in Buton and Muna has not yet been recorded in literature.

Field notes. — The only specimen collected by DE HAAN has been obtained in savannah.

Only observed twice in Muna. The voice was nearly the same as that of the European Hawfinch (*Coccothraustes*). (H.)

(B)

Streptocitta albicollis albicollis (VIEILLOT)

Pica albicollis VIEILLOT, 1818, Nouv. Dict. d'Hist. Nat. XXVI, p. 128.— "La nouvelle Calédonie" err. (!) = Buton cf. STRESEMANN, J.f.O. 1940, 88, p. 24.

Streptocitta albicollis, MEYER & WIGLESWORTH, 1898, Birds of Celebes 2, p. 576.— Buton or Muna.

Streptocitta albicollis, HARTERT, 1903, Nov. Zool. 10, p. 31.— Buton.

Streptocitta albicollis, ELBERT, 1911, Die Sunda-Exp. Ver. Geogr. Statist. Frankfurt 1, p. 148.— Muna.

Streptocitta albicollis albicollis, STRESEMANN, 1940, J.f.O. 88, pp. 24-25.— Buton.

First record. — Muna, LABILLARDIÈRE 1793 or ELBERT 1909; Buton, LABILLARDIÈRE 1793 or KÜHN 1901.

Material. — Muna, 1 ♂, 3 ♀, vii-viii.1901 (E.); Muna, Labasa, 2 ♂, 2-7.x.1948 (H.); Buton, 3 ♂, 2 ♀, viii.1901 (E.); Buton, Bau-bau, 4 ♂, 20.ix.-19.x.1948 (H.); 6 ♀, 20-25.ix.1948 (H.).

Measurements. — Muna, 3 ♂, wing 159, 155, 150; tail 290, 251, 250; bill from gape 31.4, 31.1, 30.8; 3 ♀, wing 156, 151, 143; tail 293, 279, (210); Buton, 7 ♂, wing 159, 155, 154, 150, 148, 147, 141; tail 304, 290, 287, 268, (245), 235, 228; bill from gape 33.3, 33.1, 31.8, 31.2, 31.0, 29.9, 29.5; 8 ♀, wing 156, 155.5, 152, 146, 143, 142, 142, 140; tail 268, 262, 249, 247, 246, (235), 214, (212); bill from gape 33.4, 32.0, 31.1, 31.0, 30.7, 29.5, 29.1, 28.5.

Weight. — Muna, 1 ♂, 183 gr; Buton, 3 ♂, 173, 148, 144 gr; 4 ♀, 166, 164, 163, 154 gr. (H.)

Gonads. — Muna, testes of 1 ♂, 3 × 5 mm; 4 ♂, 6 × 9, 2 × 4, 2 × 2 mm, one undeveloped; largest egg-follicle of 2 ♀, 1 mm, in 4 other females undeveloped. Only a few birds are nearly in breeding condition. (H.)

Colours. — Iris darkbrown, blackish brown or black, bill black and yellow, feet black.

Discussion. — There is rather much variation in size. Even a small male from Buton with a wing length of 141 mm is adult, with rather well developed gonads. For discussion of type-locality vide MEYER and WIGLESWORTH (l.c.) and STRESEMANN (l.c.).

Distribution. — Vide STRESEMANN (l.c. p. 25) and AMADON (Am. Mus. Nov. 1943, 1247, p. 11).

Vernacular name. — Lemba (Muna), Kau-kau lemba (Buton).

Field notes. — In savannah, on edge of wood, in village near seashore and in a banyan tree.

A rather common bird, not shy and regularly to be observed in village-gardens between the houses. Mostly several specimens together, rather high up in the trees and frequenting fruit-bearing banyan trees. The voice was penetrating but melodious. In Muna this bird was less common than in Buton. (H.)

(B)

Scissirostrum dubium (LATHAM)

Lanius dubius LATHAM, 1802, Synopsis of Birds, Suppl. 2, p. xviii.— Patria ignota (ex coll. THOMPSON) = Menado, N. Celebes, cf. STRESEMANN J.f.O. 1940, 88, p. 30.

First record. — Buton, ELBERT 1909.

Material. — Buton, 2 ♂ ad., 1 ♀ ad., viii.1909 (E.); Buton, Bau-bau, 3 ♀ ad., 27.ix-19.x.1948 (H.); Buton, 1 ♀ imm., viii.1909 (E.).

Measurements. — 2 ♂ ad., wing 97, 93; tail 83, 81; culmen 21.5, —; 4 ♀ ad., wing 98, 96, 96, 92; tail 82, 82, (76, 65, moulting); culmen 20.1, 19.8, 18.2, —; 1 ♀ imm., wing 96; tail 72; culmen 19.0.

Weight. — 3 ♀ ad., 63, 50, 48 gr. (H.)

Gonads. — Largest egg-follicle of 3 ♀, 1 mm, 1 mm, 2 mm. (H.)

Colours. — Iris darkbrown, bill and feet yellow. (H.)

Discussion. — There is much disaccord about the family in which the genus *Scissirostrum* should be placed. AMADON (Am. Mus. Nov. 1943, 1247, p. 12) put *Scissirostrum*, together with *Enodes*, in a separate subfamily of the *Sturnidae*. DELACOUR (Zoologica 1943, 28, p. 73) brought *Scissirostrum* to the *Ploceidae* (subfam. *Estrildinae*) and considered the genus as a relict of forms once standing between weavers and starlings. I think the last author is right in supposing that the *Ploceidae* are nearer to the *Sturnidae* than to the *Fringillidae*. O. NEUMANN (B.B.O.C. 1939, 59, pp. 47-48) described a "larger" race from Peleng I. (*pelingense*), with wing: ♂ 99-103, ♀ 97-99. STRESEMANN (J.f.O. 1940, 88, pp. 30-32) gives for Celebes wing ♂: 94-101, ♀ 94-101. In our collection I found for N. Celebes wing: ♂ 96-101, ♀ 93-95, C. Celebes (Palopo) wing: ♂ 99, ♀ 95-97, Togian Is. (Una-una) 2 ♂, 101, 101. As far as I can see every single breeding colony has its own average wing length. So it seems better not to discern any races on behalf of small differences in wing length.

The terra typica subst. "Menado" seems to me not to be a very lucky choice. The type, with unknown locality, came from Mr THOMPSON's collection. But in the same collection a specimen of *Streptocitta albicollis albicollis* was present which consequently came from Southern Celebes (or Buton or Muna!). So LATHAM's type most probably did not come from Menado. This locality was only chosen because the type of *Scissirostrum pagei* LAFRESNAYE 1845 (the first specimen of *Scissirostrum dubium* to be described with exact locality) came from Menado.

Distribution. — Celebes, Buton, Togian Is., Peleng, Banggai. Not yet recorded from Muna. The locality Buton has up till now not been recorded in literature.

Field notes. — Three specimens were collected by DE HAAN from a banyan tree, standing in a village near the seashore.

Rather rare and always to be seen together with Glossy Starling. The species seems to have no vernacular name. (H.)

(B)

Dicrurus hottentottus leucops WALLACE

Dicrurus leucops WALLACE, 1865, Proc. Zool. Soc. London, p. 478.—Makassar, S. Celebes.

Dicrurus hottentottus leucops, STRESEMANN, 1940, J.f.O. 88, p. 32.—Muna, Buton.

Dicrurus hottentottus leucops, VAURIE, 1949, Bull. Am. Mus. Nat. Hist. 93, pp. 302-303.—Muna, Buton.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, 1 ♂ imm., 2 ♀ ad., 1 ♀ imm., vii-viii.1909 (E.); Muna, Labasa, 1 ♂, 2 ♀, 3-5.x.1948 (H.). Buton, 1 ♂, 2 ♀, viii.1909 (E.).

Measurements. — Muna, 1 ♂ ad., wing 154; outer tail feathers 134; central tail feathers 125; bill from skull 33; bill from nostril 21.5; 4 ♀ ad., wing 150.5, 153, 155, 156; outer tail feathers 129, 132, 136, 138; inner tail feathers 117, 119, 120, 120; bill 34, 35, 35, 37; bill from nostril 22, 22, 22.5, 24.5. Buton, 1 ♂ ad., wing 160; outer tail feathers 138; inner tail feathers 114.5; bill 34; bill from nostril 21; 2 ♀ ad., wing 153.5, 154.5; outer tail feathers 127, 133; inner tail feathers 115, 115; bill 35, 35; bill from nostril 22, 22.

Weight. — 1 ♂ ad., 75; 2 ♀ ad., 73 and 83 gr (H.)

Gonads. — Testes of 1 ♂ ad., 2 × 3 mm. Largest egg-follicle of 2 ♀ ad., 1 and 3 mm (H.).

Colours. — Iris white, bill and feet black (H.)

Discussion. — In plumage totally agreeing with specimens from N. Celebes. Dimensions rather small, some lying below the lowest level of measurements known from Celebes. However, the species is said to be highly variable as regards size.

Distribution. — Celebes, Muna, Buton, and neighbouring islands. Other races occur throughout the whole Indo-Australian Archipelago.

Vernacular name. — Kampanalensi (Muna).

Field notes. — In Muna rather scarce, living in the upper branches of the trees in small patches of forest and along forest edges. Its call note was very attractive. It was often found in company with *Coracina leucopygia* and *Oriolus celebensis*. (H.)

(V)

Lonchura ferruginosa brunneiceps (WALDEN)

Munia brunneiceps WALDEN, 1872, Trans. Zool. Soc. London 8, p. 73.—Makassar, S. W. Celebes.

First record. — Muna, DE HAAN 1948; Buton, DE HAAN 1948.

Material. — Muna, Labasa, 1 sex inc., 3.x.1948 (H.); Buton, Bau-bau, 2 sex. inc., 29.ix.1948 (H.).

Measurements. — Muna, 1 sex inc., wing 52.5, tail 38, culmen 9; Buton, 2 sex inc., wing 52, 51.5; tail 40, 38; culmen 10, (10).

Weight. — 3 sex inc. 11, 12, 14 gr. (H.)

Colours. — Iris darkbrown, bill and feet grey. (H.)

Discussion. — The specimens collected by DE HAAN are much darker than a bird collected by VORDERMAN in S. Celebes, however, this last specimen may have faded, because those collected by DE HAAN agree very well with the description given by STRESEMANN (J.f.O. 1940, 88, pp. 36 - 37). There seems to be no difference in size between Buton, Muna and Celebes birds. The race *brunneiceps* can be considered as belonging to the species *Lonchura ferruginosa* according to DELACOUR (Zoologica 1943, 28, p. 83).

Distribution. — The subspecies *brunneiceps* occurs in S. Celebes, Buton and Muna. The species *Lonchura ferruginosa* occurs in Ceylon, India, Burma, Siam, S. China, Formosa, Hainan, Indo-China, Malay Peninsula, Sumatra, Java, Bali, Borneo, Philippines, Lombok, Flores, Celebes, Buton, Muna and Halmahera. There is a superspecific relation with *Lonchura grandis* from New Guinea. The occurrence in Muna and Buton was up till now not recorded.

Vernacular name. — Roné (Muna), Waé (Buton).

Field notes. — Collected in village near seashore and in alang-alang field.

A flock of approximately a hundred birds could regularly be observed in a meadow near the soccer field. Smaller flocks were seen in a fruit-bearing *Eugenia cumini* MERR. The birds were active the whole day through. Their soft, but never silent voice, the flocks taking wing and falling in soon again, made them very conspicuous. In Muna rather common, flocks of fifty birds approximately were seen in alang-alang fields. (H.) (B)

Anthreptes malacensis celebensis SHELLEY

Anthreptes celebensis SHELLEY, 1877, Monogr. Nectarinidae, p. 319, tab. 103, fig. 2.—Makassar, S. W. Celebes.

Nectarina lepida, S. MÜLLER, 1839 - 1844, Verh. Nat. Gesch. Ned. Overz. Bezitt., Land- & Volkenk. p. 90.—Buton.

Nectarina lepida, S. MÜLLER, 1858, Reize Ind. Arch. 2, p. 13.—Buton.

Anthreptes malaccensis celebensis, MEYER & WIGLESWORTH, 1898, Birds of Celebes 2, p. 476.—Buton.

First record. — Buton, S. MÜLLER 1828.

Material. — Buton, Baubau, 1 (♂) imm., 25.ix.1948 (H.); Buton, 1 ♀ ad., viii.1909 (E.); Buton, Bau-bau, 1 ♀ ad., 17.x.1948 (H.); 1 ♀ imm. 20.x. 1948 (H.).

Measurements. — Buton, 1 (♂) imm., wing 59.5; tail 31; culmen —; 2 ♀ ad., wing 62, 60.5; tail 38.5, 37; culmen 15.0, 15.0; 1 ♀ imm., wing 59.5; tail 36; culmen 15.0.

Weight. — 1 (♂) imm., 14 gr; 1 ♀ ad., 13 gr; 1 ♀ imm. 10 gr. (H.)

Gonads. — Largest egg-follicle of 1 ♀ ad., 0.5 mm (H.).

Colours. — Iris brown in immature birds, in one adult female recorded as red; legs olive-green; bill black, in immature birds pink at base of maxilla. (H.)

Discussion. — Closely resembling topotypical *A. celebensis*. This is rather surprising because according to STRESEMANN (J.f.O., 1940, 88, p. 60) S. E. Celebes is inhabited by the race *citrinus* STRES.

Distribution. — The race *celebensis* occurs in the S. W. peninsula of Celebes, the southern part of Central Celebes and, as far as I can see, Buton. The species *A. malacensis* occurs in Malaysia, Lesser Sunda Is., Philippines, Celebes and Sula Is. Not yet collected in Muna.

Vernacular name. — Tomi-tomi kamindji (♀ Buton). The same name is used for the female of *Nectarinia jugularis plateni*.

Field notes. — The specimens collected by DE HAAN were obtained in a village near the seashore and in a banyan tree near that village.

(B)

Dicaeum celebicum celebicum S. MÜLLER

Dicaeum celebicum S. MÜLLER, 1843, Verh. Nat. Gesch. Ned. Overz. Bezitt., Land- & Volkenk. p. 162.—Celebes = N. Celebes.

Dicaeum celebicum, HARTERT, 1903, Nov. Zool. 10, p. 28.—Buton.

Dicaeum celebicum celebicum, STRESEMANN, 1940, J.f.O. 83, pp. 51 - 52.—Buton, Muna.

Dicaeum celebicum celebicum, MAYR & AMADON, 1947, Am. Mus. Nov. 1360, p. 28. —Buton, Muna.

First record. — Muna, ELBERT 1909; Buton, KÜHN 1901.

Material. — Muna, no material examined; Buton, Bau-bau, 2 ♂, 17-19.x.1948 (H.).

Measurements. — Buton 2 ♂ ad., wing 48, 47; tail 25.5, 27.5; culmen 7.0, 6.9.

Weight. — 2 ♂ ad., 6, 6 gr. (H.)

Gonads. — Testes of 2 ♂ ad., 2 × 2, 1 × 1 mm. (H.)

Colours. — Iris darkbrown or blackish brown, bill & feet black. (H.)

Discussion. — I cannot see any difference between Buton birds and males from Makassar, Bone, Amurang and Gorontalo in the collection M.Z. Bogor.

Distribution. — The race *celebicum* occurs in Celebes, Buton and Muna. For zoogeographical and phylogenetical affinities vide MAYR & AMADON (l.c.).

Vernacular name. — Tomi-tomi kapèra (Buton).

Field notes. — Collected in a banyan tree standing in a village near the seashore.

No difference has been observed in habits between both species of *Dicaeum* (H.)

(B.)

Dicaeum aureolimbatum aureolimbatum (WALLACE)

Prionochilus aureolimbatus WALLACE, 1865, P.Z.S. 1865, p. 477, Pl. XXIX, fig. 1. —N. Celebes, mountains of Minahassa, N. Celebes.

Dicaeum aureolimbatum aureolimbatum, STRESEMANN, 1940, J.f.O. 88, pp. 53 - 54. —Muna.

First record. — Muna, ELBERT 1909; Buton, DE HAAN 1948.

Material. — Muna, no material examined; Buton, Bau-bau, 3 ♂ ad., 2 ♀ ad., 19-20.x.1948 (H.)

Measurements. — Buton, 3 ♂ ad., wing 51, 50.5, 48.5; tail 27, 26.5, (23.5); culmen 7, 6.5, 6.5; 2 ♀ ad., wing 48, 47.5; tail 25, 24; culmen 6.8, 6.5.

Weight. — 3 ♂ ad., 7, 6, 6 gr; 2 ♀ ad., 7, 6 gr. (H.)

Gonads. — Testes of 3 ♂ ad., 3 × 4, 3 × 3, 2 × 2 mm; largest egg-follicle of 2 ♀ ad., 1 mm. (H.)

Colours. —Iris brown, bill black above, grey beneath, feet black (H.).

Discussion. — I cannot see any difference in colour between a bird from Uru, one from Tomohon (N. Celebes) and the Buton specimens. According to STRESEMANN (l.c.) S. Celebes birds and those from Uru should be somewhat duller green on the rump and upper tail coverts and these parts should be somewhat less yellowish-green than birds from N. Celebes.

Distribution. — Celebes, Buton, Muna and a different race, *Dicaeum aureolimbatum sangirense*, on Great Sangihe I. For zoogeographical and phylogenetical details vide STRESEMANN l.c. p. 51 and MAYR & AMADON, Am. Mus. Nov. 1948, 1360, p. 18. The occurrence in Buton was up till now not recorded.

Vernacular name. — Tomi-tomi kakuni or Tomi-tomi kapera (Buton).

Field notes. — Specimens were collected in a banyan tree standing in a village near the seashore.

White-eyes could be seen ten times more than both species of *Dicaeum*. Frequenting flowering trees like *Eugenia malaccensis* L., *Ceiba pentandra*

GAERTN., *Gossampinus heptaphylla* BAKH. and in flowering or fruit-bearing *Loranthus* spec. div. Both *Loranthus* and *Ficus* fruits are eaten. (H.) (B)

Nectarinia jugularis ? plateni (BLASIUS)

Cyrtostomus frenatus var. *plateni* BLASIUS, 1885, Zeitschr. Ges. Ornith. 2, p. 289. —Kali bangkere, S. Celebes.

Cinnyris jugularis, STRESEMANN, 1939, J.f.O. 87, p. 407: abb. 17.– Buton, Muna.

First record. — Muna. The species is nowhere mentioned from Muna, except on the map given by STRESEMANN (l.c.) it is included in the distributional area of the species. So it is not certain the species has ever been collected in Muna. Buton, ELBERT 1909.

Material. — Buton 1 ♀ ad., viii.1909 (E.); Buton, Bau-bau 3 ♂ ad., 25.ix.-14.x.1948 (H.); 1 ♂ semi-ad., 1 ♀ ad., 17.x.1948 (H.).

Measurements. — 3 ♂ ad., wing 55, 54, 53; tail 36, 35.5, 32.5; culmen 17, 15, 14.5; 1 ♂ semi-ad., wing 54; tail 34; culmen 14.5; 2 ♀ ad., wing 52, 51; tail 34.5, 33; culmen 14, —.

Weight, 3 ♂ ad., 8, 8, 8 gr; 1 ♂ semi-ad. 9 gr; 1 ♀ ad. 7 gr. (H.)

Gonads. — Testes of 3 ♂ ad., 3 × 4, 1 × 1, 1 × 1 mm; 1 ♂ semi-ad. 1 × 1 mm; largest egg-follicle of 1 ♀ ad., 0.5 mm. (H.)

Colours. — Iris darkbrown or blackish brown, bill and feet black. (H.)

Discussion. — In one male the superciliary stripe is missing. At first I thought that Buton was inhabited by a new race, intermediate between *plateni* and *infrenata* HARTERT from Tukang Besi Is. But in one other male the superciliary stripe is clearly present, in the third male it is present but rather indistinct. In typical *plateni* the superciliary stripe can be obsolete also, as is shown by a male from Bone (M. Z. Bogor, nr 1556). In colour the males from Buton are very near *plateni* but in one specimen a little more yellow. In females the colour is very near *plateni*, only in one specimen the vent is somewhat darker yellow and in the other specimen the throat is a little more yellowish. Generally speaking the birds from Buton are much nearer to *plateni* than to *meyeri* HARTERT, which is rather surprising because according to STRESEMANN (J.f.O. 1940, 88, p. 56) S. E. Celebes is inhabited by *meyeri*.

Distribution. — The race *plateni* occurs in S. Celebes, C. Celebes, and, as far as I can see, Buton. For distribution of the species vide STRESEMANN (l.c.). The occurrence in Buton has up till now not been recorded clearly.

Vernacular name. — Tomi-tomi sosopa (♂, Buton), Tomi-tomi kamindji (♀ Buton).

Field notes. — In village near the seashore.

A common bird especially in villages. (H.) (B)

Nectarinia sericea porphyrolaema WALLACE

Nectarinia porphyrolaema WALLACE, 1865, P.Z.S. 1865, p. 479.—Makassar, S. W. Celebes.

Cinnyris sericea porphyrolaema, STRESEMANN, 1940, J.f.O. 88, pp. 56 - 57.—Buton, Muna.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, no material examined; Buton, 1 ♂, viii.1909 (E.); Buton, Bau-bau, 1 ♂, 27.ix.1948 (H.).

Measurements. — Buton, 2 ♂, wing 60.5, 58; tail 41.5, 40; culmen 16.5, —.

Weight. — 1 ♂, 9 gr. (H.)

Gonads. — Testes of 1 ♂, 5 × 7 mm. Obviously in breeding condition. (H.)

Colours. — Iris dark brown, bill and feet black. (H.)

Discussion. — I never saw *tonkeana* STRESEMANN but originally I thought Buton birds to have some affinity to that race because of the large blue area on the wing. Here I follow STRESEMANN (l.c.) in including Buton birds in the race *porphyrolaema*.

Distribution. — The race *porphyrolaema* occurs in the whole of Celebes (the northern and eastern peninsula excepted), Buton and Muna. *N. sericea* is a typically Moluccan and Papuan species. There is a superspecific relation to *N. sperata* (*N. brasiliana* included) from the Philippines and Malaysia.

Vernacular name. — Tomi-tomi sosopa (Buton).

Field notes. — The only specimen collected by DE HAAN was obtained in a village near the seashore.

This species preferred gardens outside the villages. Once a fiery red Sun-bird (*Aethopyga siparaja* subsp. (?) B.) was observed in a wooded plot at the banks of kali Napa near Bau-bau. (H.) **(B)**

Zosterops lutea intermedia WALLACE

Zosterops intermedia WALLACE, 1863, P.Z.S. 1863, p. 493.—Makassar, S. W. Celebes.

Zosterops intermedia, HARTERT, 1903, Nov. Zool. 10, p. 30.—Buton.

Zosterops chloris intermedia, STRESEMANN, 1940, J.f.O. 88, p. 66.—Buton, Muna.

Zosterops lutea intermedia, MAYR, 1944, Bull. Am. Mus. N.H. 83, p. 194, fig. 4 (map).—Buton, Muna.

First record. — Muna, ELBERT 1909; Buton, KÜHN, 1901.

Material. — Muna, no material examined; Buton, 2 ♂ ad., viii.1909 (E.); Buton, Bau-bau, 10 ♂ ad., 21.ix.-17.x.1948 (H.); 1 ♂ imm., 23.ix.

1948 (H.); 2 ♀ ad., 21-23.ix.1948 (H.); 3 ♀ imm., 23.ix.-17.x.1948 (H.); 2 sex inc. imm., 24.ix.-7.x.1948 (H.).

Measurements. — Buton, 12 ♂ ad., wing 59.5, 58.5, 58, 58, 58, 57.5, 57.5, 57, 56.5, 56.5, 56.5, 56; tail 44, 43, 43, 43, 42, 42, 42, 41.5, 41, 41, 40.5, 40; culmen 11.5, 11, 11, 11, 11, 10.5, 10.5, 10, 10, (9.8), 9.2, —; 1 ♂ imm., wing 57; tail 38; culmen 11; 2 ♀ ad., wing 58, 55; tail 43, (40); culmen 11.5, 9.4; 3 ♀ imm., wing 57.5, 56.5, 56; tail 40.5, 40, 39; culmen 9.8, 9.8, 9.0; 3 sex. inc. imm., wing 57, 54; tail 41, 40; culmen 9.4, 9.0.

Weight. — 10 ♂ ad., 14, 13, 12, 11, 11, 10, 10, 10, 9, 9 gr; 1 ♂ imm., 12 gr; 2 ♀ ad., 14, 14 gr; 3 ♀ imm., 12, 10, 10 gr; 2 sex inc. imm., 12, 10 gr. (H.)

Gonads. — Testes of 9 ♂ ad., 4 × 7, 4 × 5, 3 × 4, 3 × 3, 2 × 2, 1 × 2, 1 × 2, 1 × 1, 1 × 1 mm; largest egg-follicle of 2 ♀, 1 mm. Obviously breeding season in September and October. (H.)

Colours. — Iris brown, bill black or brownish black above, grey beneath, feet grey. (H.)

Discussion. — Immature birds are somewhat more greenish beneath and somewhat more greyish-green above than the adult specimens. Most of the skins in this series are rather bad and some are a little discoloured. However, I do not think there is any difference between topotypical specimens and Buton birds.

Distribution. — Vide E. MAYR l.c.

Vernacular name. — Tomi-tomi (Buton, Muna).

Field notes. — Collected in village near seashore.

This White-eye was certainly the most common bird from Buton. Travelling from tree to tree, together with other small birds such as *Dicaeidae* and *Nectariniidae* they hunted for insects. Fruits of the banyan tree (*Ficus* spec.) and *Eugenia* are also much appreciated by this species. Their soft voice was heard in every tree. (H.) **(B)**

Hypothymis puella puella (WALLACE)

Myiagra puella WALLACE, 1862, P.Z.S. 1862, p. 340.—Sula Is. & Celebes = Menado, N. Celebes, cf. OBERHOLSER, Proc. U.S. Nat. Mus. 1911, 39, p. 590, with redescription.

Muscicapa coerulea, S. MÜLLER, 1841, Verh. Nat. Gesch. Ned. Overz. Bezitt., Land & Volkenk., p. 91.—Small island near Buton.

Hypothymis puella, MEYER & WIGLESWORTH, 1898, Birds of Celebes 1, p. 377.—Small island off Buton.

Hypothymis puella puella, STRESEMANN, 1940, J.f.O. 88, p. 90.—Buton.

First record. — Buton, S. MÜLLER 1828.

Material. — Buton, 1 ♂, viii.1909 (E.).

Measurements. — Buton, 1 ♂, wing 74; tail 73; culmen 10.8.

Discussion. — I cannot see any difference between this bird and birds from Celebes.

Distribution. — Vide STRESEMANN l.c. p. 89. The small island where S. MÜLLER discovered the first specimen, lies quite near the coast of Buton, just opposite Bau-bau.

Not recorded from Muna.

(B)

Cisticola juncidis ≷ constans LYNES

Cisticola juncidis constans LYNES, 1938, Ornith. Monatsber. 46, p. 167.—Mt. Lompo Batang, 1100 m, S. Celebes.

Cisticola cisticola, HARTERT, 1903, Nov. Zool. 10, p. 30.—Buton.

Cisticola juncidis constans, STRESEMANN, 1940, J.f.O. 88, pp. 98 - 99.—Buton.

First record. — Muna, DE HAAN 1948; Buton, KÜHN 1901.

Material. — Muna, Labasa, 1 ♀ semi-ad., 3.x.1948 (H.); Buton, Bau-bau, 1 ♂, 1 ♀ semi-ad., 27.ix.1948 (H.).

Measurements. — Muna, 1 ♀ semi-ad., wing 45; culmen 8.9; Buton, 1 ♂, wing 50; tail 37, culmen 9.2; 1 ♀ semi-ad., wing 47, culmen 8.7.

Weight. — 1 ♂, 8 gr; 2 ♀ semi-ad., 7.6 gr. (H.)

Gonads. — Testes of 1 ♂, 3 × 5 mm; largest egg-follicle of 2 ♀ semi-ad., 1, 1 mm. (H.)

Colours. — Iris brown; bill lightbrown above, olivebrown beneath (♀ semi-ad. Buton) or pink (2 other specimens). Feet lightbrown (1 ×) or pink (2 ×). (H.)

Discussion. — The material is in rather bad condition, so conclusions about the exact subspecific status are difficult. Birds from Muna and Buton are rather similar to the birds from Makassar and Bone in our collection but seem to be a trifle less reddish, general tinge a little less clear and a little darker.

Distribution. — Vide STRESEMANN l.c. p. 98.

Vernacular name. — Pikoré (Muna), Pipi-pipi kolé (Buton).

Field notes. — DE HAAN collected two specimens on a soccer field, another specimen in an alang-alang field.

Small bird, hiding in the grass. When disturbed it takes a look around and utters a cricket-like song. Rather common in alang-alang fields. (H.)

(B)

Malacocincla celebensis sordida STRESEMANN

Aethostoma celebense sordida STRESEMANN, 1838, Orn. Mon. Ber. 46, p. 147.—Lalolei, S. E. Celebes.

Trichostoma finschi, HARTERT, 1903, Nov. Zool. 10, p. 30.—Buton.

Malacocincla celebensis sordida, STRESEMANN, 1940, J.f.O. 88, p. 111.—Buton.

First record. — Buton, KÜHN 1901.

Material. — Buton, 1 ♂, viii.1909 (E.) ; Buton, Bau-bau, 2 ♂, 25.ix.1948; Buton, Napa River, 1 ♂ juv., 20.x.1948 (H.).

Measurements. — Buton, 3 ♂, wing 75.5, 76.5, 77; tail 53, 57, —; bill from skull 18.5, 18.5, 19; tarsus 26, 26.5, 27.

Weight. — 2 ♂ ad., 27 and 29; 1 ♂ juv., 21 gr (H.).

Gonads. — Testes of 2 ♂ ad., 1 × 1 and 1 × 1 mm; 1 ♂ juv., 1 × 1 mm (H.).

Colours. — Iris brown; bill, upper mandible, dark brown, lower mandible, grey; legs brown. The juvenile male has the iris of a lighter brown and the legs a more fleshy brown than the adults (H.).

Discussion. — Prof. E. STRESEMANN (Berlin) has been kind enough to compare one of the freshly collected adult males with series from various parts of Celebes, after which he found it to agree with the S. E. Celebes race *sordida,* a fact which is very satisfactory from a distributional point of view. The birds have the flanks a dirty greyish brown, as well as the chest band ill-defined and of a greyish brown. The specimen collected by ELBERT in 1909, which was preserved in the Buitenzorg Museum for almost 40 years, proved to be heavily "foxed".

The immature bird has dark rufous edges to the wing quills, dark rufous tail feathers and a conspicuously white centre of the abdomen; otherwise, it does not differ from the adult specimens.

Distribution. — An endemic species of Celebes and Buton, with many local races. The race *sordida* occurs in the S. E. peninsula of Celebes and in Buton. The species has not yet been found in Muna.

Vernacular name. — Olo (Buton).

Field notes. — This species frequented low bushes along forest edges. It was rather common along the small river Napa, where the birds apparently lived on the ground. Its song was heard early in the morning before sunrise (H.). HEINRICH found this species one of the best songsters of Celebes; he described also its early song (STRESEMANN, l.c.).

(V)

Motacilla flava taivana (SWINHOE)

Budytes taivanus SWINHOE, 1863, Proc. Zool. Soc. London, p. 274 and 334.—Formosa.

First record. — Buton, DE HAAN 1948.

Material. — Buton, Bau-bau, 2 ♂ ad., 1 (♀) ad., 25-28.ix.1948 (H.).

Measurements. — 2 ♂, wing 81, 85.5; claw of hind toe 12, 13; 1 (♀), wing 81.5; claw of hind toe 11.5.

Weight. — 1 ♂, 13; 1 ♀, 17 gr (H.).

Gonads. — Testes of 1 ♂ ad., 1 × 2 mm (H.).

Colours. — Iris dark brown; bill blackish grey; legs black (H.).

Discussion. — The subspecific identity of these specimens has been discussed by VOOUS in a previous paper (Treubia 20, 1950, pp. 647-656).

Distribution. — Common winter visitor from E. Asia throughout the whole Indo-Australian Archipelago. Apart from specimens collected on Buton, DE HAAN observed Yellow Wagtails of uncertain subspecific origin on Muna, early October 1948. R. C. ANDREWS collected a male of equally uncertain racial identity on 14.xii.1909 on Tobea Island, northern Buton Strait (MAYR, in litt.).

Vernacular name. — Kindu-kindu-boné-gunung (Buton).

Field notes. — Collected at the soccer field near the European district of Bau-bau and along the rocky sea coast. On other occasions Yellow Wagtails were seen in dry river beds, but whether these were *flava* or *cinerea* remains uncertain. (H.) The native name, indicating that the species should be an inhabitant of the mountains, may suggest that the habitat choice of *M. cinerea* is well known by the native people of the island.

(V)

Coracina bicolor (TEMMINCK)

Ceblephyris bicolor TEMMINCK, 1824, Planch. Col., 278.— N. Celebes (see: STRESEMANN, 1940, p.21).

Coracina bicolor, STRESEMANN, 1940, J.f.O. 88, p. 121.—Muna.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, 1 ♂ ad., 1 ♀ ad., 1 ♀ imm., vii-viii.1909 (E.). Buton, 2 ♂ ad., 1 ♀ ad., viii.1909 (E.).

Measurements. — Muna, 1 ♂ ad., wing 175; tail 129; 1 ♀ ad., wing 176; tail 129.5; bill from skull 30.5. Buton, 2 ♂ ad., wing 174, 174.5; tail 130, 126; bill 29, 30; 1 ♀ ad., wing 176; tail 130; bill 31.

Discussion. — Exactly like specimens from N. Celebes.

Distribution. — Celebes, Togian Islands, Muna, Buton. Not observed by DE HAAN in 1948; hence apparently not occurring near human habitations, as does *C. leucopygia*! An endemic species to the Celebesian region with far relatives in the Philippine Islands (cf. VOOUS & VAN MARLE, 1949).

(V)

Coracina leucopygia (BONAPARTE)

Graucalus leucopygius BONAPARTE, 1851, Comp. Av. 1, p. 354.—N. Celebes.

Coracina leucopygia, STRESEMANN, 1940, J.f.O. 88, p. 121.—Muna.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, 2 ♂, 1 ♀, vii-vii.1909 (E.); Muna, Labasa, 1 ♂, 3 ♀, -7.x.1948 (H.). Buton, 2 ♂, 1 ♀, viii.1909 (E.); Buton, Bau-bau, 3 ♂, 2 ♀, 5-29.ix.1948 (H.).

Measurements. — Muna, 3 ♂, wing 152.5, 152.5, 155; tail 119, 122, 20.5; bill from skull 27, 26, 25.5; 4 ♀, wing 147.5, 147.5, 148, 152; tail 112, 16, 120, 122; bill 23, 25, 24.5, 27.5. Buton, 5 ♂, wing 149.5, 149.5, 150, 151.5, 155; tail 116, 117, 127, 124, 122; bill 27.5, 27.5, 24, —, 27; 3 ♂, wing 149, 149.5, 151.5; tail 115, 114, 121; bill 28, 25, 23.5. The average measurements are: ♂, wing 151.9, tail 120.9, bill 26.4; ♀, wing 149.3, tail 117.1, bill 25.2.

Weight. — 4 ♂, 67, 72, 73, 94; 3 ♀, 67, 79, 89 gr (H.).

Gonads. — Testes of 4 ♂, 3 × 3, 4 × 6, 4 × 8, 4 × 7 mm. Largest egg-follicle of 3 ♀ ad., 2, 2, 8; 1 ♀ semi-ad., 1 mm (H.). Some specimens were in breeding condition.

Colours. — Iris creamy white, except in one not fully adult female from 2.x, in which it was dark brown; bill and legs black, except in the not fully adult female, in which they were grey (H.).

Discussion. — Upper parts and head seemed to be slightly darker grey than in birds from N. Celebes.

Distribution. — Celebes, Muna, Buton. Also Tobea Island, northern Buton Strait (14.xii.1909, collected by R. C. ANDREWS; MAYR, in litt.). An endemic species to the Celebesian region with morphological and distributional relations to *C. papuensis* from the Moluccas (cf. VOOUS & VAN MARLE, 1949).

Vernacular name. — Nga-wélawéla (Muna), Keelang-keelalai (Buton).

Field notes. — A common bird which was noticed in all localities where trees or bushes were available, often in company with *Coracias temminckii*. The specimens were collected in native gardens and savannah (V) (H.).

Edolisoma morio wiglesworthi VAN OORT

Edolisoma morio wiglesworthi VAN OORT, 1907, Notes Leyden Museum 29, p. 77.— S. Celebes.

Edolisoma morio wiglesworthi, STRESEMANN, 1940, J.f.O. 88, p. 127.—Muna.

First record. — Muna, ELBERT 1909.

Material. — Muna, Labasa, 4 ♂ ad., 1-5.x.1948 (H.).

Measurements. — Muna, 4 ♂ ad., wing 112.5, 114, 115, 115.5; tail 86.5, 94.5, 90, 90; bill from skull 23, 23.5, —, —.

Weight. — 3 ♂ ad., 46, 48, 51 gr (H.).

Gonads. — Testes of 3 ♂ ad., 3 × 3, 3 × 4, 4 × 5 mm (H.).

Colours. — Iris dark brown; bill and legs black (H.).

Discussion. — Chin, lores, and ear-coverts black; larger part of throat and whole breast slaty-grey. No topotypical specimens of *wiglesworthi* from Makassar were examined, but there is little doubt that the Muna specimens belong to this race.

Distribution. — Southern half of Celebes, including the islands of Muna, Tobea Island in Buton Strait (R. C. ANDREWS; MAYR, in litt.), and Kabaena. The species is not yet known from Buton. Other races of this species occur in N. Celebes, the Moluccas, and the Philippine Islands.

Vernacular name. — Kaminsi (Muna).

Field notes. — Observed along forest edges, in leafless *Tectona* forests, and small patches of heavy forest. The birds lived in the upper canopy of the trees and occurred in small flocks (H.).

(V)

Lalage nigra leucopygialis WALDEN

Lalage leucopygialis WALDEN, 1872, Trans. Zool. Soc. London 8, p. 69.—Menado, N. Celebes.

Lalage leucopygialis, STRESEMANN, 1940, J.f.O. 88, p. 128.—Muna.

First record. — Muna, ELBERT 1909.

Material. — Muna, 1 ♂ ad., 29.vii.1909 (E). In "Natur-Museum, Senckenberg", Frankfurt, Germany (specimen seen by me).

Measurements. — Muna, 1 ♂, wing 93.5; wing tip (difference between longest and shortest primary) 24.5; bill from skull 17; tarsus 20.

Discussion. — The specimen agrees with birds from N. Celebes, but has a slightly shorter bill. *L. leucopygialis* differs from *L. sueurii* by having a grey hind neck, mantle and back, and glossy black, instead of white, lesser wing-coverts. The pattern of the underside of the primaries is also different, the black being much less extended in *leucopygialis* than in *sueurii*. The structural differences comprise a shorter wing tip, a shorter tarsus, and a slightly broader bill in *leucopygialis*.

Distribution. — Formerly considered an endemic species of the Celebes region: Celebes, Peling, Banggai, and Sula Islands (STRESEMANN, 1940). However, its place within the Indo-Malayan species *L. nigra* seems fully justified (MAYR & RIPLEY, Am. Mus. Nov. 1116, 1941). It has not been found on Buton, where *Lalage sueurii* occurs.

(V)

Lalage sueurii sueurii (VIEILLOT)

Turdus sueurii VIEILLOT, 1818, Nouv. Dict. d'Hist. Nat. 20, p. 270.—Timor.

First record. — Buton, DE HAAN 1948.

Material. — Buton. Bau-bau, pullus, 27.ix.1948; 1 ♂ ad., 28.ix.1948; 1 ♂ ad., 1 ♀ ad., 13.x.1948 (H.).

Measurements. — Buton, 2 ♂, wing 95, —; wing tip (difference between longest and shortest primary) 27, —; bill from skull 17, 17.5; tarsus 21.5, 22; 1 ♀, wing 93; wing tip 24; tail 70; bill —, tarsus 21.5.

Weight. — 2 ♂ ad., 2, 5; 1 ♀ ad., 23; pullus, 18 gr. (H.)

Gonads. — Testes of 1 ♂ ad., 2 × 3 mm. Largest egg-follicle of 1 ♀ ad., 1 mm (H.).

Colours. — Iris dark brown; bill (♂) black, (♀) black with yellow base; legs black. The pullus has iris and bill dark brown and the legs grey (H.).

Discussion. — Not distinguishable from specimens from the Lesser Sunda Islands and Java. Specific characters are: the narrow bill, the pointed wing, the 2nd primary being much larger than the 6th, and (in the female) unbarred under-parts (see: MAYR & RIPLEY, Am. Mus. Nov. 1116, 1941). The pullus agrees perfectly with a slightly older specimen from Sumba Island in the Amsterdam Museum.

Distribution. — In the Celebesian region up to now only known from the southern parts of the Southern Peninsula (STRESEMANN, 1940), where it occurs alongside with *L. (nigra) leucopygialis*. The latter species occurs on Muna. From Buton only *sueurii* is recorded, but it is of course unknown whether also *leucopygialis* occurs there.

Vernacular name. — Peong-Peong (Buton).

Field notes. — Very common in the European quarters of the village Bau-bau, where it was observed on the ground as well as in the top of high *Casuarina*-trees. It was a very vivid bird, which was extremely scarce outside Bau-bau (H.).

(V)

Artamus leucorhynchus celebensis BRÜGGEMANN

Artamus leucorhynchus var. *celebensis* BRÜGGEMANN, 1876, Abh. naturw. Ver. Bremen 5, p. 69.—N. Celebes.

Artamus leucogaster, HARTERT, 1903, Nov. Zool. 10, p. 27.—Buton.

First record. — Muna, ELBERT 1909 ("Natur-Museum Senckenberg", Frankfurt, Germany; STEINBACHER, in litt.); Buton, KÜHN 1901.

Material. — Muna, Labasa, imm. 1.x.1948 (H.). Buton, 3 ♂, 2 ♀, viii. 1909 (E.); Buton, Bau-bau, 5 ♂, 3 ♀, 2 sex inc., 24.ix.-16.x.1948 (H.).

Measurements. — Buton, 8 ♂, wing 137, 138.5, 139, 140.5, 141.5, 143, 144, 147; bill from base 22, 23, 23.5, 23.5, 24, 24.5; 5 ♀, wing 140.5, 142, 142.5, 144.5, 146; bill 22, 22.5, 23, 23, 23.5.

Weight. — 5 ♂, 41, 44, 45, 46, 48; 3 ♀, 42, 48; imm., 43 gr (H.).

Gonads. — Testes of 5 ♂, 6 × 9, 5 × 8, 7 × 12, 6 × 13, 7 × 12 mm. Largest egg-follicle of 3 ♀, 1, 2, 2 mm (H.). Some birds seem to be in breeding condition.

Colours. — Iris blackish brown; bill and legs grey (H.).

Discussion. — The following wing measurements can be tabulated, indicating that small local differences in mean dimensions occur throughout the Celebesian populations, but the final results are largely depending on the available material (see also: STRESEMANN, Nov. Zool. 20, 1913, pp. 290-291).

N. Celebes (coll. VAN MARLE)	♂	133-144,	average (6)	138.8
Makassar (STRESEMANN, 1940)	♂	131-141,	,, (9)	136.2
Buton (see above)	♂	137-147,	,, (8)	141.3
N. Celebes (coll. VAN MARLE)	♀	134-144,	,, (4)	139.8
Buton (see above)	♀	140.5-146,	,, (5)	143.1
Tobean Island, Buton Strait [1])	♀	142		
Muna (STEINBACHER, in litt.) [2])	♂♀	137-141,	,, (3)	139.3
Buton (STRESEMANN, 1913)	♂♀	137-140,	,, (2)	138.5
N. Celebes (combined)	♂♀	133-146,	,, (17)	140.6
Muna/Buton (combined)	♂♀	137-147,	,, (19)	141.2

Distribution. — Apart from Celebes and neighbouring islands this race inhabits most of the Lesser Sunda Islands, including Saleyer, Djampea, and Kangean Islands. R. C. ANDREWS collected 2 specimens in Tobea Island, Buton Strait (MAYR, in litt.). The species inhabits a large area in the Indo-Australian region.

Vernacular name. — Nga-Wéla-wéla (Muna); Pagi-pagi (Buton). (See also: *Coracina leucopygia*!)

Field notes. — A common bird in Muna and Buton (H.).

(V)

Hirundo tahitica javanica SPARRMAN

Hirundo javanica SPARRMAN, 1789, Mus. Carlson. tab. 100.—Java.

First record. — Buton, DE HAAN 1948.

Material. — Buton, Bau-bau, 1 ♂, 29.ix.1948; sex inc., 27.ix.1948 (H.).

Measurements. — Buton, 1 ♂, wing 105.5; outer tail feathers 49.5; middle tail feathers 48.

Weight. — 1 ♂, 16 gr (H.).

Gonads. — Testes 4 × 9 mm (H.).

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1) R. C. ANDREWS, coll.; MAYR, in litt.

2) ELBERT, coll.; "Natur-Museum Senckenberg", Frankfurt, Germany.

Colours. — Iris dark brown; bill and legs black (H.).

Discussion. — Scaly appearance and dark shaft streaks on abdomen apparent. See the comments by MAYR, in STRESEMANN, 1940.

Distribution. — Celebes, Buton; also in western parts of Indonesia. DE HAAN observed this species on Muna, but did not collect specimens. Other races occur throughout Papuasia, Australia, and Polynesia.

Vernacular name. — Wala-walangké (Buton). (See also: *Hemiprocne longipennis*!)

Field notes. — Rather scarce in Muna and Buton and only few individuals seen together (H.).

(V)

Lichtensteinipicus fulvus wallacei (TWEEDDALE)

Mülleripicus wallacei TWEEDDALE, 1877, Ann. & Mag. Nat. Hist. 20, p. 533.—Makassar, S. Celebes.

Lichtensteinipicus wallacei, ELBERT, 1911, Die Sunda Exped. Ver. f. Geogr. Statist. Frankfurt a.M., p. 148.—Muna.

Lichtensteinipicus wallacei, RENSCH, 1926, Orn. Mon. Ber. 34, p. 175.—Muna.

Lichtensteinipicus fulvus wallacei, STRESEMANN, 1940, J.f.O. 88, p. 391.—Muna.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, 2 ♂, 1 ♀, vii-viii.1909 (E.). Buton, 6 ♂, 3 ♀, viii. 1909 (E.); Buton, Bau-bau, 2 ♂ ad., 2 ♀ ad., 1 ♀ imm., 21-28.ix.1948 (H.).

Measurements. — Muna, 2 ♂, wing 192, 195; tail 151, 161; bill from skull 47, 47; 1 ♀, wing 193; tail 160; bill 43.5. Buton, 8 ♂, wing 185, 185.5, 186.5, 187, 189, 191, 193, 195.5; tail 145, 145, 152, 155, 155, 158; bill 44.5, 44.5, 47, 48, 48, 48.5, 49; 5 ♀, wing 185, 185.5, 188, 189, 191; bill 41, 42.5, 43, 43.5, 47; tail 150, 150, 158, 161.

Weight. — 2 ♂, 184, 221; 2 ♀, 183, 201 gr (H.).

Gonads. — Testes of 1 ♂ ad., 8 × 4 mm. Largest egg-follicle of 2 ♀ ad., 1, 2 mm; 1 ♀ imm., 1 mm (H.).

Colours. — Iris creamy white; bill black; legs black (once greyish black) (H.).

Discussion. — The highly variable, but usually reddish brown coloration of the under- parts of the Muna and Buton Woodpeckers attracted the attention of VON BERLEPSCH and ELBERT (see: ELBERT, l.c., who believed to be the collector of a new subspecies). However, RENSCH (l.c.) discovered that the feathers of the under-parts were stained all over with a reddish dust, changing the originally light greyish buff coloration into different shades of a reddish brown. It is very probable that Muna and Buton Woodpeckers have on the average larger dimensions than those from the southern Peninsula, as will be shown in the following table.

Muna	♂	183-195,	average (4)	190.0
Buton	♂	185-195.5,	„ (8)	189.1
Celebes (STRESEMANN, 1940)	♂	173-191		
Muna	♀	180-193,	average (4)	184.5
Buton	♀	178-191,	„ (7)	185.4
Celebes (STRESEMANN, 1940)	♀	178-187		

Distribution. — An endemic species of Celebes, Muna and Buton, with a close relative in the Philippine Islands. The race *wallacei* in N. Celebes is replaced by *L. f. fulvus*.

Field notes. — Rather common in Muna and Buton and occurring in almost any habitat (H.). (V)

Collocalia vanikorensis aenigma RILEY

Collocalia vestita aenigma RILEY, 1918, Proc. Biol. Soc. Washington 31, p. 156.— Parigi, N. Central Celebes.

First record. — Muna, DE HAAN 1948.

Material. — Muna, Labasa, 1 ♂, 3.x.1948 (H.).

Measurements. — Muna, 1 ♂, wing 116.5; tail 48.5; depth of tail furcation 8; tarsus 9.5.

Weight. — 1 ♂, 10 gr (H.).

Gonads. — Testes 2 × 3 mm (H.).

Colours. — Iris dark brown; bill and legs black (H.).

Discussion. — Tarsus bare; rump not lighter than back; infurcation of tail very slight; throat silvery greyish brown; abdomen with faint dark shaft streaks. — The specimen agrees with the descriptions by STRESEMANN (Orn. Mon. Ber. 40, 1932, pp. 110 - 111) and MAYR (Am. Mus. Nov. 915, 1937, pp. 10 - 11), but differs by having above a dark greenish oily gloss. The feathers of the crown are rather long and have a slight greenish gloss. Prof. E. STRESEMANN (Berlin Museum) was kind enough to compare the specimen with a small series of *C. v. aenigma* from Lalolei, S. E. Celebes, and could not find any material difference, except that the underside of the Muna Swift was very slightly browner, but the feathers may have been stained secondarily. (See also STRESEMANN, 1940).

Distribution. — C. and S. E. Celebes, Muna. Other races occur in S. Celebes and eastwards through the Moluccas and Papuasia to Polynesia.

Vernacular name. — Ta-ladiladi (Muna).

Field notes. — Very common in Muna. Its occurrence was usually associated with small pools and other waters. The species was regularly observed flying in immense flocks low above the water in late afternoon

hours. Swifts were also very common in Buton, but as no specimens were collected, their specific identity remains uncertain (H.). (V)

Aceros cassidix brevirostris VAN BEMMEL, subsp. nov.

Cranorrhinus cassidix ELBERT, 1911, Sunda-exp. Ver. Georg. Statist. Frankfurt 1, p. 148.— Muna.

Rhyticeros cassidix, STRESEMANN, 1940, J.f.O. 88, p. 401.—Buton & Muna.

Aceros cassidix, PETERS, 1945, Checkl. Birds World 5, p. 265 (partim).— Buton, Muna.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Diagnosis. — Length of bill shorter than in topotypical *A. cassidix* TEMMINCK (terra typica: Tondano, N. Celebes). Wing length, especially in males, generally shorter than in the nominal race.

Type of subspecies. — ♂, Labasa, Muna I., 6.x.1948, coll. G. A. L. DE HAAN No. 625. In collection Zoölogisch Museum, Amsterdam.

Material. — Muna, 1 ♂, vii-viii.1909 (E.); Muna, Labasa, 5 ♂, 3 ♀, 6-9.x.1948 (H.); Buton, 3 ♂, 1 ♀, viii.1909 (E.); Buton, Bau-bau, 2 ♂, 1 ♀, 24-25.ix.1948 (H.); Buton or Muna, 1 ♀, 1948 (H.).

Measurements. — Muna, 6 ♂, wing 397, 405, 410, 410, 418, 425; tail 272, 275, 275, 280, 280, 288; bill 188, 192, 198, 210, 210, 212; 3 ♀, wing 368, 370, 395; tail 256, 258, 260; bill 157, 157, 162; Buton, 5 ♂, wing 405, 416, 430, 435, 440; tail 275, 295, 296, 298, —; bill 198, 208, 208, 210, 216; 2 ♀, wing 382, 382; tail 272, 287; bill 152, 165; Buton or Muna, 1 ♀, wing 378; tail 270; bill 168.

Gonads. — Muna, testes of 4 ♂, 9 × 24, 12 × 19, 8 × 19, 9 × 17 mm, largest egg-follicle of 2 ♀, 2 and 5 mm; Buton, testes of 2 ♂, 20 × 9, 13 × 19 mm, largest egg-follicle of 1 ♀ ad., 7 mm. (H.)

Colours. — Iris reddish brown in males, darkbrown in females. ELBERT reported iris of two males red and orange-red. Bill yellow, brown and black, once yellow, violet-red and black. Bare throat white and blue, with black stripe in males. Feet black. (H.) The bill is once reported orange-red by ELBERT.

Discussion. — Length of bill in this species seems to diminish going from North to South, as can be seen in the accompanying table. Measurements were taken at Bogor (B), Leiden and Amsterdam (V). Differences are most obvious in males.

Distribution. — The new race inhabits Buton and Muna. North Celebes is inhabited by *A. cassidix cassidix* TEMM. Birds from Central and South Celebes are more or less intermediate between both races.

Vernacular name. — Halo (Buton and Muna).

Subspecies	Locality	Sex	Number of edges on lower bill	Real length of lower bill	Wing length
Aceros cassidix cassidix (Temm.).	North Celebes	♂	3	211	435
		♂♂	—	218	462
		♂♂♂	3	226	439
		♂♂♂	3	242	455
		♂♂♂	3	243	470
		♂♂♂	3½	228	462
		♂♂♂♂	4	236	438
		♂♂♂♂	4	237	458
		♂♂♂♂	4	246	453
		♂♂♂♂	4	250	440
		♂♂♂♂	4	256	450
		♂♂♂♂♀	4½	236	464
		♂♂♂♀♀	—	170	400
		♂♂♂♀♀	3	176	397
		♂♂♂♀♀	3	178	395
		♂♂♂♀♀	3½	179	395
		♂♂♂♀♀	3½	185	415
		♂♂♂♀♀	4	174	378
		♂♂♂♀♀	4	175	418
		♂♂♂♀♀	4	177	410
		♂♂♂♀♀	4	195	392
		♂♂♂♀♀	5	186	405
	Central Celebes	♂♂♂	3	241	390
		♂♂♂	3½	192	—
		♂♂♂	5	243	431
Aceros cassidix brevirostris subsp. nov.	Buton	♂	3	210	405
		♂♂	—	216	415
		♂♂♂	3½	216	435
		♂♂♂	4	198	440
		♂♂♂	4	208	416
		♂♂♂	4	208	430
		♂♂♂♀	3½	165	382
		♂♂♂♀	4	152	382
		♂♂♂♀	4	168	378
	Muna	♂	3	188	397
		♂♂	3	192	418
		♂♂♂	3	198	410
		♂♂♂	3	210	410
		♂♂♂♂	4	210	405
		♂♂♂♂	4	212	425
		♂♂♂♂	4½	192	400
		♂♀♀	3	157	368
		♂♀♀	3	157	370
		♂♀♀	3½	162	395
	South Celebes	♂	3	182	405
		♂♂	3	212	432
		♂♂♀	4	221	450
		♂♀♀	2½	165	385
		♂♀♀	3½	175	398
		♂♀♀	4	180	407
	S. E. Celebes	♀	4	187	420

Field notes. — Birds were collected at forest edge and in a banyan tree.

A common bird, to be found in wooded plots and often seen in fruit bearing banyan trees, during early morning and late afternoon. Mostly in pairs together.

According to the inhabitants there are two other species of Hornbills in Buton and Muna, one generally black, the other light coloured (? B). Both are smaller. The last mentioned species has been seen in Muna, but not collected. (H.) **(B)**

Penelopides exarhatus sanfordi (STRESEMANN)

Rhabdotorrhinus exaratus sanfordi STRESEMANN, 1932, Ornith. Monatsb. 40, p. 111.— Masembo, Mengkoka Mts, + 550 m, S. E. Celebes.

Rhabdotorrhinus exarhatus, ELBERT, 1911, Sunda-exp. Ver. Georg. Statist. Frankfurt 1, p. 148.— Muna.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, 1 ♂, 1 ♀, vii-viii.1909 (E.); Buton, 3 ♂, 1 ♀, viii.1909 (E.).

Measurements. — Muna, 1 ♂, wing 239; tail 215; bill from gape 103; 1 ♀, wing 226; tail 198; bill from gape 97; Buton, 3♂, wing 239, 236, 233; tail 210, 210, 208; bill from gape 99, 97, 93; 1 ♀, wing 225; tail 192; bill from gape 92.

Discussion. — There is no difference between birds from Bone in our collection and the present series of Muna and Buton.

STRESEMANN (J.f.O. 1940, 88, p. 400) mentioned that in females often a "rahmfarbenen Brauenstreif" is present, perhaps as a rest of the juvenile plumage. As a matter of fact many juvenile females have a black head, as is mentioned by STRESEMANN himself. The adult females from Buton and Muna have a black head and so have two subad. females from Minahassa in our collection. Only one juvenile female from Bone has broad, creamcoloured superciliary stripes.

Distribution. — The race *sanfordi* occurs in C., E., S. E. and C. Celebes, Buton and Muna. The nominal race occurs in N. Celebes. The genus *Penelopides* is known from Celebes and the Philippines.

The locality Buton has up till now not been recorded in literature. **(B)**

Alcedo atthis hispidoides LESSON

Alcedo hispidoides LESSON, 1837, Descr. Mamm. et Ois. récemm. découv. Compl. Oeuvres BUFFON, 9, p. 345.— Buru.

Alcedo ispida hispidoides, HARTERT, 1903, Nov. Zool. 10, p. 25.— Buton.

Alcedo atthis hispidoides, PETERS, 1945, Checkl. Birds World, 5, p. 173.— Buton.

First record. — Muna, DE HAAN 1948; Buton, KÜHN 1901.

Material. — Muna, Wamingkoli, 2 ♀ ad., 29.ix.1948; 1 ♀ imm., 10.x. 1948 (H.); Buton, 1 ♂ ad., 2 ♀ ad., viii.1909 (E.); Buton, Kali Napa, 1 ♂ ad., 20.x.1948.

Measurements. — Muna, 2 ♀ ad., wing 74, 73; tail 38, 37.5; bill from oral border of nostril 33.5, 33.2; 1 ♀ imm., wing 72; tail 32; bill from oral border of nostril 32.1; Buton, 2 ♂ ad., wing 73, 72; tail 33, 32.5; bill from oral border of nostril 33.2, 31.2; 2 ♀ ad., wing 72, 72; tail 36, 36; bill from oral border of nostril 33.5, 33.4.

Weight. — Muna 2 ♀ ad. 33, 32 gr; 1 ♀ imm. 29 gr; Buton 1 ♂ ad., 22 gr. (H.)

Gonads. — Testes of 1 ♂ ad., 3 × 4. (H.)

Colours. — Iris black in adults, darkbrown in one imm. specimen; bill black in one male, black above, orange or red in both adult and immature females, feet red or orange red in adults, black and red in one immature female. (H.)

Discussion. — STRESEMANN (J.f.O. 1940, 88, p. 408) mentioned that in some specimens from Paleleh (N. Celebes) the ear-coverts are more or less tinged with rusty brown instead of blue. The same is the case with three of the Buton birds. The immature female from Muna is more greenish, less blue on the upper side than the adult specimens. The underparts are dull buff, mixed with much dark greyish brown.

Distribution. — Vide PETERS l.c.

Vernacular name. — Idjowelanda or Idju-idju walanda (Buton & Muna).

Field notes. — Specimens were collected by DE HAAN at river banks and on coral rocks at the seashore. (B)

Pelargopsis melanorhyncha melanorhyncha (TEMMINCK)

Alcedo melanorhyncha TEMMINCK, 1826, Planches Col. d'Ois., livr. 66, tab. 391.— N. Celebes (ex coll. REINWARDT).

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, 1 ♂, vii-viii.1909 (E.); Buton, 3 ♂, 4 ♀, viii.1909 (E.); Buton, Bau-bau, 1 ♂, 22.ix.1948 (H.); 1 ♀, 29.x.1948 (H.).

Measurements. — Muna, 1 ♂, wing 145; tail 92; bill from oral border of nostril 67.1; Buton, 4 ♂, wing 149, 146, 145, 144; tail 88, 87, 86, 84; bill from oral border of nostril 65.5, 64.0, 63.7, 63.1; 5 ♀, wing 156, 156, 155, 153, 153; tail 97, 97, 97, 96, 93; bill from oral border of nostril 68.1, 67.6, 64.5, 61.9, —.

Weight. — 1 ♂, 184 gr, 1 ♀ 203 gr. (H.)

Gonads. — Testes of 1 ♂, 5 × 9 mm; largest egg-follicle of 1 ♀, 2 mm. Birds are in breeding condition in September. (H.)

Colours. — Iris darkbrown, bill black, feet black and red. (H.)

Discussion. — Males are smaller than females (vide STRESEMANN, J.f.O 1940, 88, p. 411).

Distribution. — The nominal race occurs in N., N.C. and S. E. Celebes, Muna and Buton. For distribution of species vide STRESEMANN (l.c.). Buton and Muna are recorded here for the first time.

Vernacular name. — Bonkaka (Buton).

Field notes. — DE HAAN collected two specimens near a village at the seashore.

Scarce. To be found at the seashore, sitting on branches of trees or shrubs growing on the steep cliffs bordering the beach. Conspicuous by its loud voice. (H.) (B)

Halcyon chloris chloris (BODDAERT)

Alcedo chloris BODDAERT, 1783, Tabl. Planch. Enlum. p. 49.— Cape of Good Hope = Buru, cf. HARTERT, 1904, Nov. Zool. 11, p. 197.

Halcyon chloris, HARTERT, 1903, Nov. Zool. 10, p. 25.— S. W. Buton.

First record. — Muna, ELBERT 1909; Buton, KÜHN, 1901.

Material. — Muna, 1 ♂, 1 ♀, vii.-viii.1909 (E.); Muna, Labasa, 1 ♂, 1 sex inc. 2-5.x.1948 (H.); Buton, 3 ♀, viii.1909 (E.); Buton, Bau-bau, 6 ♂, 22.ix-19.x.1948 (H.); 3 ♀, 24.ix-15.x.1948 (H.).

Measurements. — Muna, 2 ♂, wing 106, 103; tail 70, 65; bill from oral border of nostril 38.8, 38.7; 1 ♀, wing 112; tail 69; bill from oral border of nostril 41.1; 1 sex inc., wing 104; tail 67; bill from oral border of nostril 36.2; Buton, 6 ♂, wing 108, 106, 103, 102, 102, 99; tail 69, 69, 68, 65, 64, 62; bill from oral border of nostril 40.7, 40.0, 39.7, 38.7, 38.3, 36.0; 6 ♀, wing 112, 107, 104, 102, 99, 99; tail 75, 70, 65, 65, 64, 63; bill from oral border of nostril 42.8, 40.5, 40.0, 40.0, 39.2, 39.0.

Weight. — 7 ♂, 61, 59, 56, 53, 52, 52, 51 gr; 3 ♀, 61, 61, 54 gr; 1 sex inc. 70 gr. (H.)

Gonads. — Testes of 7 ♂, 4 × 7, 4 × 6, 3 × 7, 3 × 4, 2 × 3, 2 × 3, 1 × 4 mm; largest egg-follicle of 3 ♀ ad. 3, 2, 2 mm. Most birds in breeding condition. (H.)

Colours. — Iris darkbrown or blackish brown, bill black above, white beneath, feet black or very dark grey. (H.)

Distribution. — The nominal race occurs in Celebes, Togian Is., Sula Is., Buton, Muna, Lesser Sunda Is. except Bali, Moluccas, Tenimbar Is., Kei Is., W. Papuan Is. and N. W. New Guinea. The species occurs from the Red Sea through S. Asia, the whole of the Indo Australian Arch. to Austra-

lia and the islands of the S. W. Pacific. The species had not yet been reported from Muna.

Vernacular name. — Takué (Muna) ; Rato-rato (Buton).

Field notes. — In village near seashore and in savannah.

A very common bird, to be found everywhere in open country. Hunts from a high outlook, catching its prey, mostly insects and crabs, in the air, in trees, in shrubs and on the ground. (H.) (B)

Halcyon australasia sancta VIGORS & HORSFIELD

Halcyon sanctus VIGORS & HORSFIELD, 1826, Trans. Linn. Soc. London 15, p. 206.— N. S. Wales.

First record. — Buton, ELBERT 1909.

Material. — Buton, 2 ♂, 1 ♀, viii.1909 (E.) ; Buton, Bau-bau, 1 sex inc., 29.ix.1948 (H.).

Measurements. — Buton, 2 ♂, wing 94.5, 90; tail 66, 55; bill from oral border of nostril 36.9, 32.7; 1 ♀, wing 90; tail 59; bill from oral border of nostril 34.1; 1 sex inc., wing 96; tail 61; bill from oral border of nostril 37.8.

Weight. — 1 sex inc., 46 gr. (H.)

Colours. — Iris dark brown, bill black above, white and black beneath, feet black. (H.)

Distribution. — Migrant. Breeds in Australia. Vide PETERS (Checkl. B. W. 1945, 5, p. 205) and STRESEMANN (J.f.O. 1941, 89, p. 100). Not yet reported from Buton.

Vernacular name. — Idju-idju walanda (Buton). The same name is given to *Alcedo atthis hispidoides.* (B)

Halcyon coromanda pelingensis NEUMANN

Halcyon coromanda pelingensis NEUMANN, 1939, B. B. O. C. 59, p. 107.— Peleng I.
Halcyon coromanda, HARTERT, 1903, Nov. Zool. 10, p. 25.— N. Buton.

First record. — Muna, ELBERT 1909; Buton, KÜHN 1901.

Material. — Muna, 1 ♂, vii-viii.1909 (E.).

Measurements. — 1 ♂, wing 112; tail 73; bill from oral border of nostrils 48.5.

Discussion. — J. L. PETERS (Checkl. B. W. 1945, 5, p. 195) is right in supposing that Celebes birds are smaller than those from Sula Is. and therefore should be united with *pelingensis* NEUMANN. I could compare my specimen from Muna with some specimens from NEUMANN's typical series from Peleng, and these did not show any difference, so I consider them inseparable. Four Sula Is. birds in our collection are much larger than

pelingensis. The type of *rufa* WALLACE without doubt came from the Sula Is.

Distribution. — The race *pelingensis* occurs in Celebes, Togian Is., Muna, Buton and perhaps also Talaut Is, Sangihe Is, Talissi I. and Lembeh I. For distribution of the species vide PETERS, (l.c. pp. 194-195). (B)

Hemiprocne longipennis wallacei (GOULD)

Dendrochelidon wallacei GOULD, 1859, Proc. Zool. Soc. London, p. 100.—Macassar, S. Celebes.

Hemiprocne longipennis wallacei, STRESEMANN, 1940, J.f.O. 88, p. 398.— Buton.

First record. — Buton, ELBERT 1909.

Material. — Buton, 2 ♂, viii.1909 (E.) ; Buton, Bau-bau, 3 ♂, 1 ♀, 1 sex inc., 24.ix-14.x.1948; Buton, Bau-bau, 1 pullus, 24.ix.1948 (H.).

Measurements. — Buton, 5 ♂, wing 180, 182, 183, 183, 190; outer tail feathers 115, 122; 1 ♀, wing 182.5.

Weight. — 2 ♂ ad., 41, 45; 1 ♂ semi-ad., 39; 1 ♀ ad., 45; sex inc., 42; pullus, 26 gr (H.).

Gonads. — Testes of 2 ♂ ad., 4 × 5, 4 × 4; 1 ♂ semi-ad., 1 × 2 mm. Largest egg-follicle of 1 ♀ ad., 2 mm; in the latter specimen the oviduct was strongly swollen (H.). Some specimens are apparently in breeding condition.

Colours. — Iris dark brown; bill and legs black. The semi-adult male (14.x) has bill and legs purplish black. The pullus differs from the adults by having the legs coloured a dark flesh (H.).

Discussion. — No appreciable difference in colouration and dimensions with N. Celebes birds was noticed. The downy young has a scaly muscovy brown plumage all over.

Distribution. — Celebes, Peling and Banggai Islands, Sula Islands, Saleyer, Buton, Kabaena (STRESEMANN, 1940). Observed, but not collected on Muna (H.). Representatives of this species live throughout the western parts of Indonesia.

Vernacular name. — Wala-walangké (Buton) (See also: *Hirundo tahitica*).

Field notes. — Very common in Buton, but less common in Muna. A very noisy bird, only becoming silent during the hottest hours of the day, when most individuals were perching on the leafless branches of tall trees, especially of *Tectona grandis* and *Tamarindus indica* (H.). (V)

Coracias temminckii (VIEILLOT)

Garrulus Temminckii VIEILLOT, 1819, Nouv. Dict. d'Hist. Nat. 29, p. 435.—East Indies (= Celebes).

Coracias temminckii, HARTERT, 1903, Nov. Zool. 10, p. 25.—Buton.

Coracias temminckii, STRESEMANN, 1940, J.f.O. 88, p. 420.— Muna, Buton.

First record. — Muna, ELBERT 1909; Buton, KÜHN 1901.

Material. — Muna, 2 ♂, 2 ♀, vii-viii.1909 (E.); Muna, Labasa, 1 ♂, 2.x.1948; 1 sex-inc., 6.x.1948 (H.). Buton, 1 ♂, 5 ♀, viii.1909 (E.); Buton, Bau-bau, 3 ♂, 5 ♀, 27-28.x.1948 (H.).

Measurements. — Muna, 3 ♂, wing 184, 184, 185; tail 132, 132, 133; bill from skull 44.5, 48, 49; 2 ♀, wing 185.5, 187; tail 128, 131; bill 48, 48.5. Buton, 4 ♂, wing 186, 186.5, 189, 190; tail 131, 134, 133, 139; bill 48.5, 45.5, 48, 47.5; 10 ♀, wing 179, 180, 181, 181, 184, 185.5, 185.5, 187, 187.5, 187.5; tail 133, 127, 125, 130, 131, 129, 137, 138, 130, 133; bill 46.5, 50, 45.5, 47.5, 46, 45.5, 50, 47, 50.5, 47.

Weight. — 4 ♂, 144, 148, 159, 164; 5 ♀, 149, 150, 167, 168, 176; 1 sex inc., 167 gr (H.).

Gonads. — Testes of 4 ♂, 4 × 6, 3 × 4, 3 × 5, 3 × 6 mm. Largest egg-follicle of 5 ♀, 1, 2, 2, 3, 3 mm (H.).

Colours. — Iris blackish brown; bill black; legs yellowish brown (H.).

Discussion. — Birds from Muna and Buton seem to be generally brighter above and tinged with purer blue than recently collected specimens from N. Celebes in the collection VAN MARLE. Immature birds are less brightly coloured above and have the upper wing-coverts strongly intermixed with greenish brown feathers, instead of these being bright violet.

Distribution. — Celebes, Muna, Buton. An endemic species of the Celebesian range.

Vernacular name. — Togé (Muna), Toréa (Buton).

Field notes. — A rather common bird in native gardens and in the savannah near Labasa (Muna). Its general behaviour resembled that of a Jay (*Garrulus glandarius*) but it differed by regularly perching upon telephone wires and dead branches of high trees (H.). The native Buton name "toréa" and the Celebesian name "tjorra" (STRESEMANN, 1940) are very probably imitations of its usual call note. (V)

Eurystomus orientalis connectens STRESEMANN

Eurystomus orientalis connectens STRESEMANN, 1913, Nov. Zool. 20, p. 302.— Moa, S. Celebes.

Eurystomus orientalis connectens, STRESEMANN, 1940, J.f.O. 88, p. 422.— Muna.

First record. — Muna, ELBERT 1909; Buton, DE HAAN 1948.

Material. — Muna, 1 ♀, vii-viii.1909 (E.); Muna, Labasa, 1 ♀, 4.x.1948 (H.). Buton, Bau-bau, 1 ♂, 14.x.1948 (H.).

Measurements. — Muna, 2 ♀, wing 191, 191; tail 95, 95.5; wing-tail ratio 49.7, 50.0%; wing-tip 71.5, 73; wing-tip index 37.4, 38.2%. Buton,

1 ♂, wing 196; tail 98; wing-tail ratio 50.0%; wing-tip 74; wing-tip index 37.8% (see RIPLEY, Proc. Biol. Soc. Washington 55, 1942, pp. 169-172).

Weight. — 1 ♂, 129; 1 ♀, 154 gr (H.).

Gonads. — Testes, 2 × 4 mm. Largest egg-follicle, 2 mm (H.).

Colours. — Iris darkbrown; tail and legs red (H.).

Discussion. — The birds agree with a specimen from Makassar, S. Celebes, at hand. They are intermediate in colouration above and below between a series of Sumatran breeding birds (*orientalis*) and rather pale Australian migrants collected in the Moluccas (*pacificus*). Hence the Muna and Buton birds are referred to *connectens* (cf. RIPLEY, l.c.).

Distribution. — Celebes, Muna, Buton. R. C. ANDREWS collected a male on Tobea Island, northern Buton Strait, on 14.xii.1909 (MAYR, in litt.). The species has a very wide range from S. E. Asia to Australia. The race *connectens* inhabits many islands in the western parts of East Indonesia.

Vernacular name. — Holo-holo (Muna).

Field notes. — These birds were very scarce on Muna and Buton. The few birds observed were not at all shy and were seen in the high trees within the village Bau-bau (Buton) and along the edge of a forest (Muna) (H.). (V)

Ninox perversa STRESEMANN

Ninox perversa STRESEMANN, 1938, Ornith. Monatsber. 46, p. 149.—nomen novum for *Noctua ochracea* SCHLEGEL, 1866, nec *Noctua ochracea* HAWORTH, 1809 (*Lepidoptera*), terra typica: Negri Lama, N. Celebes.

First record. — Buton, ELBERT 1909.

Material. — Buton, 1 ♂, viii.1909 (E.).

Measurements. — 1 ♂, wing 189; tail 108; projected culmen 22.0.

Colours. — In a semi-ad. male from Bumbulan (N. Celebes), collected by MENDEN, the iris is yellow, eyelid black, bill bone-white and feet grey.

Discussion. — This rather rare species is one of the best discoveries made in Buton by the ELBERT expedition.

SHARPE (Cat. Birds B. M. 1875, 2, Pl. xi, f. 2) gives a beautiful picture of the species, but the outer side of the tail is in fact not banded with white as it is pictured there. In this respect the somewhat crude picture in MEYER & WIGLESWORTH (Birds of Celebes 1898, 1, Pl. iv) is more correct. There seems to be no difference between the Buton birds and our three specimens from Celebes.

Distribution. — N., C., E. and S. E. Celebes and Buton. In the S. W. Peninsula the species in only known from Palopo (one specimen in our collection). (B)

Trichoglossus ornatus (LINNAEUS)

Psittacus ornatus, LINNAEUS, 1758, Syst. Nat. ed. 10, 1, p. 98 (ex EDWARDS and BRISSON). — "America" = India orientalis, cf. LINNAEUS, 1766, Syst. Nat. ed. 12, 1, p. 143 = Celebes, cf. PETERS, 1937, Checklist Birds World, 3, p. 148 = Buton.

Psittacus ornatus, S. MÜLLER, 1840, Verh. Nat. Gesch. Ned. Overz. Bezitt., Land & Volkenkunde, p. 90, p. 107.— Buton.

Psittacus (*Trychoglossus*) *ornatus*, H. VON ROSENBERG, 1863, Natuurk. Tijdschr. Ned. Ind. 25, p. 139.— Buton.

Trichoglossus ornatus, H. SCHLEGEL, 1864, Mus. Pays-Bas, Psittaci, p. 112.—Buton.

Trichoglossus ornatus, O. FINSCH, 1868, Die Papageien 2, pt. 2, p. 844.— Celebes, not Buton (!).

Trichoglossus ornatus, SALVADORI, 1891, Cat. Birds B. M. 20, p. 62.— Buton.

Trichoglossus ornatus, St. G. MIVART, 1896, Monogr. Lories, London, p. 119, Pl. XXXIX.— Buton.

Trichoglossus ornatus, MEYER & WIGLESWORTH, 1898, Birds of Celebes, 1, pp. 121-122.— Buton.

Trichoglossus ornatus, PETERS, 1937, Checkl. Birds World, 3, p. 148.— Buton.

Trichoglossus ornatus, STRESEMANN, 1940, J.f.O. 88, pp. 435-436.— Buton, Muna.

First record. — Muna, ELBERT 1909; Buton, FR. VALENTIJN 1726.

Material. — Muna, 1 ♂ imm., 1 ♀ imm., vii-viii.1909 (E.); Muna, Labasa, 2 ♀ ad., 3.x.1948 (H.); Buton, 2 ♂ ad., 2 ♀ ad., 2 sex inc. ad., 1 ♂ imm., 1 ♀ imm., 1 sex inc. imm., viii.1909 (E.); Buton, Bau-bau, 3 ♂, 1 ♀, 22-27.ix. 1948 (H.).

Measurements. — Muna, 2 ♀ ad., wing 122, 122; tail 79, 78; projected culmen from cere 18.5, 18.1; 1 ♂ imm., wing 118; tail 71; projected culmen from cere 19.8; 1 ♀ imm., wing 122; tail 77; projected culmen from cere 18.0; Buton, 5 ♂ ad., wing 132, 131, 129, 129, 124; tail 90, 84, 81, 81, (76); projected culmen from cere 21.1, 20.4, 19.4, 19.2, 18.0; 3 ♀ ad., wing 132, 129, 122; tail 85, 84, 78; projected culmen from cere 19.7, 18.8, 18.0; 2 sex inc. ad., wing 127, 124; tail 82, 82; projected culmen from cere 18.5 18.1; 1 ♂ imm., wing 126; tail 78; projected culmen from cere 18.6; 1 ♀, wing 126; tail 80; projected culmen from cere 19.0; 1 sex inc. imm., wing 128; tail 81; projected culmen from cere 19.1.

Weight. — Muna, 2 ♀ ad., 88, 76 gr; Buton, 3 ♀, 100, 99, 94 gr; 1 ♀ ad., 89 gr. (H.)

Gonads. — Testes of 3 ♂, 5 × 7, 4 × 7, 3 × 5 mm; largest egg-follicle of 3 ♀, 4, 3, 3 mm. Birds collected September and October are in breeding condition. (H.)

Colours. — Iris red; bill orange or orange-red; feet grey. (H.)

Discussion. — Most of the birds from Muna are smaller than birds from Buton but the Muna series is not large enough to prove this character to be really constant.

Distribution. — Vide STRESEMANN (l.c., p. 435).

Vernacular name. — Koluli (Buton and Muna).

Field notes. — Collected by DE HAAN in village near the seashore and in teak forest.

The Lorikeet was locally abundant, especially where native gardens and forest meet, and large hollow trees offer an opportunity for nesting to a whole colony. Feed on seeds, such as *Tectona* and *Casuarina*. A favourite cage-bird in native houses. The Lorikeet, just as other *Loriinae* has a strong and penetrating smell. (H.) (B)

Cacatua sulphurea sulphurea (GMELIN)

Psittacus sulphureus GMELIN, 1788, (ex BRISSON), Syst. Nat. I, 1, p. 330.— in Moluccis Insulis = Buton, cf. STRESEMANN, J.f.O. 1940, 88, p. 438.

Psittacus cristatus, LABILLARDIÈRE, 1800, Voy. Rech. La Pérouse, 2, p. 301.— Buton.

Psittacus sulphureus, S. MÜLLER, 1840, Verh. Nat. Gesch. Ned. Overz. Bezitt., Land & Volkenk., p. 90, p. 107.— Buton.

Psittacus (Plyctolophus) sulphureus, VON ROSENBERG, 1863, Natuurk. Tijdschr. Ned. Ind. 25, p. 139.— Buton.

Plictolophus sulfureus, FINSCH, 1867, Die Papageien, 1, p. 297.— "scheinen auf Buton zu fehlen" (!).

Cacatua sulphurea, MEYER & WIGLESWORTH, 1898, Birds of Celebes 1, p. 130.— Buton.

Kakatoe sulphurea sulphurea, PETERS, 1937, Checkl. Birds World, 3, p. 175.— Buton.

Cacatua sulphurea sulphurea, STRESEMANN, 1940, J.f.O. 88, p. 439.— Buton, Muna.

First record. — Muna, ELBERT 1909; Buton, FR. VALENTIJN 1726.

Material. — Muna, 1 ♂, 1 ♀, vii.-viii.1909 (E.); Muna, Labasa, 1 ♂, 3 ♀, 1-6.x.1948 (H.); Buton, 1 ♂, viii.1909 (E.); Buton, Bau-bau, 3 ♂, 8 ♀, 19-24.ix.1948 (H.).

Measurements. — Muna, 2 ♂, wing 230, 226; tail 121, 116; projected culmen from cere 40.5, 33.5; 4 ♀, wing 229, 225, 224, 220; tail 122, 119, 119, 114; projected culmen from cere 38.1, 35.3, (35), 33.7; Buton, 4 ♂, wing 235, 231, 222, 221; tail 126, 119, 119, 115; projected culmen from cere (41.8), 37.8, 35.5, —; 8 ♀, wing 235, 229, 228, 228, 226, 224, 224, 223; tail 122, 120, 120, 119, 117, 116, 114, 114; projected culmen from cere 34.5, 34.4, 33.8, 33.6, 33.2, 32.9, (27.5), (26.3).

Weight. — 4 ♂, 388, 358, 341, 320 gr; 11 ♀, 337, 322, 321, 320, 316, 314, 306, 303, 296, 289, 273 gr. (H.)

Gonads. — Testes of 4 ♂, 5 × 11, 3 × 9, 2 × 5, — mm; largest egg-follicle of 11 ♀, 5 mm. (1 ×), 3 mm (4 ×), 2 mm (3 ×), 1 mm (2 ×), undeveloped (1 ×). Only part of the birds is in breeding condition in September and October. (H.)

Colours. — Iris black or blackish brown in males, red in females, once a female had a brown iris; bill and feet black. (H.)

Discussion. — There is much variation in size and weight, which, as far as I can see, is not due to difference in age, because even the smallest birds seem to be mature. In old birds the bill is mostly shorter than in young specimens.

Distribution. — Vide STRESEMANN l.c.

Vernacular name. — Kea-kea (Buton), Wela-wela (Muna).

Field notes. — DE HAAN collected specimens in a village near the sea-shore and in teak forest. Cockatoos are often caught as cage-birds but numbers seem not to have diminished since 1828.

The cockatoo was a noisy bird, very conspicuous by its white plumage when the forest was fresh and green, but much less striking in the dry monsoon, when everything was pale and brown. A noxious bird. Even full-grown cocoa-nuts are peeled, young fruits of *Ceiba* and *Gossampinus* are destroyed, but scarcely eaten. Nests in hollow trees, mostly *Gossampinus*. Usually in pairs or small flocks. (H.) **(B)**

Tanygnathus sumatranus sumatranus (RAFFLES)

Psittacus sumatranus RAFFLES, 1822, Trans. Linn. Soc. London 13, p. 231.— "Sumatra", (a cage bird) = Buton, cf. STRESEMANN, Ornith. Monatsber. 1938, 46, p. 149.

Psittacus Mülleri, S. MÜLLER, 1841, Verh. Nat. Gesch. Ned. Overz. Bezitt., Land & Volkenk. pt. 4, pp. 107-108.— Buton.

Psittacus (*Tanygnathus*) *Mulleri*, VON ROSENBERG, 1863, Natuurk. Tijdschr. Ned. Ind. 25, p. 139.— Buton.

Eclectus Mülleri, FINSCH, 1868, Die Papageien 2, p. 360.— "Auf Buton fehlt *E. Mülleri* bestimmt" (!).

Tanygnathus muelleri, MEYER & WIGLESWORTH, 1898, Birds of Celebes 1, pp. 140-141.— Buton.

Tanygnathus mulleri mulleri, PETERS, 1937, Checkl. Birds of the World, 3, p. 240.— Buton.

Tanygnathus sumatranus sumatranus, STRESEMANN, 1940, J.f.O. 88, p. 440.— Buton, Muna.

First record. — Muna, ELBERT 1909; Buton, S. MÜLLER 1828.

Material. — Muna, 3 ♂, 1 ♀, vii-viii.1909 (E.); Muna, Labasa, 1 ♀, 4.x.1948 (H.); Buton, 2 ♂, 2 ♀, viii.1909 (E.).

Measurements. — Muna, 2 ♂, wing 199, 195; tail 130, 128; projected culmen from cere 31.1, 31.0, 3 ♀, wing 204, 196, 195; tail 132, 126, 122; projected culmen from cere 31.8, 31.2, 31.0; Buton 2 ♂, wing 205, 198; tail 139, 126; projected culmen from cere 33.8, 30.9; 2 ♀, wing 207, 198; tail 126, 124; projected culmen from cere 30.0, 27.4.

Weight. — Muna, 1 ♀, 234 gr. (H.)

Gonads. — Muna, largest egg-follicle of 1 ♀, 1 mm. (H.)

Colours. — Bill red in all males, white in all females except one female collected in Muna by DE HAAN, in which the bill is red. There are two possibilities. The first is that mantri MOHARI considered every red-billed bird as a male, every white-billed as a female and did not check the real sex. As he was a very conscientious collector, I think his sexing is trustworthy. The second is that most authors are wrong in supposing that a white bill and a green mantle are juvenile characters, because one specimen has a yellowish green mantle with white bill. Perhaps in females the colour of the bill corresponds with the condition of the gonads, which is suggested by the red-billed female collected by DE HAAN. In the female from Muna collected by DE HAAN the iris is dirty-yellow, feet olive-grey, cere grey.

Discussion. — There is much variation in size, obviously not corresponding with age. Birds in juvenile plumage are sometimes larger than birds in full dress.

There is one curious bird in our collection with a bluish wash on top of the head and obvious blue spots on the chin. It is a female which has been exposed in the show-collection for a long time. On the exposition label is written: "Island Muna, leg. MOHARI" but as no original collectors' label is present I am in doubt about the real identity of this bird. It may be an aberrant specimen or some puzzling representative of the species of unknown origin. This specimen is left out of the material discussed above.

Judging by the large series collected by ELBERT, *Tanygnathus sumatranus* must have been reduced in numbers during the last decades, perhaps due to bird-trapping on a rather large scale.

Distribution. — Vide STRESEMANN (1940, l.c.).

Vernacular name. — Koda (Muna).

Field notes. — DE HAAN collected his specimen at the edge of a forest. Could often be seen in *Leptospermum* trees and fruit bearing *Ficus*. During the hottest hours of the afternoon they took rest among the foliage of the *Bauhinia* trees which grew here and there in the savannah. Both *Prioniturus* and *Tanygnathus* could be heard, even on moonless nights, flying overhead at great height. (H.) (B)

Prioniturus platurus platurus (VIEILLOT)

Psittacus platurus VIEILLOT (ex ms. TEMMINCK), 1817, (1818), Nouv. Dict. d'Hist. Nat. 25, p. 314. — "Nouvelle Calédonie", err. = Celebes.

Psittacus setarius, S. MÜLLER, 1839-1844, Verh. Nat. Gesch. Ned. Overz. Bezitt., Land & Volkenk., p. 90, p. 107.— Buton.

Psittacus (Prioniturus) platurus, VON ROSENBERG, 1863, Natuurk. Tijdschr. Ned. Ind. 25, p. 139.— Buton.

Prioniturus Wallacei, SCHLEGEL, 1864, De Dierentuin etc., De Klimvogels, p. 70.— Buton.

Electus platurus, SCHLEGEL, 1864, Cat. Mus. Pays Bas, Psittaci, p. 45.— Small island near Buton.

Pionias platurus, FINSCH, 1868, Die Papageien, 2, pt. 1, p. 398.— Small island near Buton.

Prioniturus platurus platurus, PETERS, 1937, Checkl. Birds World, 3. p. 238.— Buton.

Prioniturus platurus platurus, STRESEMANN, 1940, J.f.O. 88, pp. 441-442.— Muna.

First record. — Muna, ELBERT 1909; Buton, S. MÜLLER 1828.

Material. — Muna, 2 ♂ ad., 2 ♂ imm., 2 ♀, vii-viii.1909 (E.); Muna, Labasa, 1 ♀, 7.x.1948 (H.); Buton, 3 ♂ ad., viii.1909 (E.).

Measurements. — Muna, 2 ♂ ad., wing 173, 169; tail 89, 79; central rectrices 155, 146; projected culmen from cere 23.1 22.8; 2 ♂ imm., wing 165, 161; tail 98, 84; central rectrices 131, —; projected culmen from cere 23.5, 23.0; 3 ♀, wing 170, 166, 165; tail 89, 88, 87; central rectrices 114, 109, —; projected culmen from cere 21.5, 21.5, 20.8; Buton, 3 ♂ ad., wing 185, 178, 176; tail 93, 90, 88; central rectrices 160, 153, 151; projected culmen from cere 23.5, 23.2, 22.5.

Weight. — Muna, 1 ♀, 157 gr. (H.)

Gonads. — largest egg-follicle of 1 ♀, 4 mm. (H.)

Colours. — 1 ♀, Iris grey, bill grey and black, cere dark grey, feet grey. (H.)

Discussion. — In 1828 and 1909 the species must have been very common. In 1948 DE HAAN collected only one specimen. Perhaps the populations of this bird have seriously diminished because of trapping on a large scale for trading as cage-birds. Already in 1828 many parrots were caught and sold in Buton!

Birds from Muna are on the average a little smaller than Buton and Celebes birds. I am not sure the females collected in Muna by ELBERT are really adult, but the specimen collected by DE HAAN, intermediate between the two other females, certainly is in breeding condition.

Distribution. — Vide STRESEMANN (l.c. p. 141). I accept PETERS' (l.c.) terra typica design. "Celebes" for the moment, as SCHLEGEL's suggestion "Buton" is certainly incorrect, because *Psittacus platurus* VIEILLOT has been described in 1818, *Psittacus setarius* TEMMINCK in 1824, while MÜLLER collected in Buton in 1828. TEMMINCK's type might in fact have been collected in Celebes by REINWARDT, in 1821, but in that case cannot be the type used in the ms. seen by VIEILLOT! This puzzle seems to me to be of some importance, but it cannot be solved at this moment.

Vernacular name. — Katuli (Muna).

Field notes. — DE HAAN collected one specimen at the edge of a forest in Muna.

More often heard than seen. Mostly in flocks of approximately ten specimens. (H.) (B)

Loriculus stigmatus stigmatus (S. MÜLLER)

Psittacus (Psittacula) stigmatus S. MÜLLER, 1843, Verh. Nat. Gesch. Ned. Overz. Bezitt., Land & Volkenk. p. 182.— N. Celebes.

Loriculus stigmatus stigmatus, STRESEMANN, 1940, J.f.O. 88, p. 444.—Buton, Muna.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, 2 ♂, 2 ♀, vii-viii.1909 (E.); Muna, Labasa, 1 ♂ ad., 6.x.1948 (H.); Buton, Bau-bau, 5 ♂, 17-18.x.1948 (H.); 4 ♀, 16-20.x.1948 (H.); Buton, 1 ♂ imm., viii.1909 (E.); 1 sex inc., 28.ix.1948 (H.).

Measurements. — Muna, 3 ♂, wing 97, 97, 92; tail 42, 42, 42; projected culmen from cere 11.6, 11.4, 10.9; 2 ♀, wing 99, 90; tail 43, 42; projected culmen from cere 10.6, 10.4; Buton, 5 ♂, wing 95, 95, 94, 93, 93; tail 44, 44, 44, 42, 42; projected culmen from cere 11.7, 11.6, 11.2, 11.0, 10.7; 1 sex inc., wing 93; tail 42; projected culmen from cere 11.0; 1 ♂ imm., wing 93.5; tail 40; projected culmen from cere 10.9; 4 ♀, wing 95, 90, 90, 89; tail 44, 42, 40, 39; projected culmen from cere 11.4, 11.0, 11.0, 10.9.

Weight. — 6 ♂, 41, 40, 39, 37, 36, 31 gr; 1 sex inc. 36 gr; 4 ♀, 49, 39, 39, 33 gr. (H.)

Gonads. — Testes of 7 ♂, 5 × 6, 5 × 6, 4 × 6, 4 × 5, 3 × 5, 3 × 4, 2 × 3 mm; largest egg-follicle of 4 ♀, 2, 2, 0.5, — mm. Most birds in breeding condition in October. (H.)

Colours. — Iris in males yellow (1 ×), pale yellow (1 ×), yellowish white (2 ×), dirty white (1 ×), brown (2 ×). Iris in females dark olive brown (1 ×), brown (2 ×), yellowish white (1 ×). Bill black. Cere yellowish brown, orange yellow in one ad. male. Feet: brown, yellowish brown and once orange yellow in an adult male. (H.)

The colour of the iris is not clear to me. According to literature the iris in adult males in breeding condition should be yellow, in adult females brown. But in two adult males in full dress and breeding condition the iris is brown! In one female, not in full breeding condition the iris is recorded as yellowish white. I am quite sure Mr DE HAAN's records are reliable.

Discussion. — There is one remarkable specimen in this series, a bird recorded as sex inc. above. The bird is in adult female dress, with yellow iris. DE HAAN wrote on the label: "♂ sen., testes 3 × 5 mm". Now this may

be a mistake but it is also possible the specimen represents a male in female dress!

There is no difference between birds from Buton and Muna and a series from Celebes in our collection.

Distribution. — Vide STRESEMANN (l.c. p. 444). MEYER & WIGLESWORTH (Birds of Celebes, 1898, 1, p. 159) wrote: "It was not obtained in the S. E. part at Kandari by BECCARI nor was it observed by the earlier travellers in Buton". This is rather surprising because the species is not at all scarce at the moment!

Vernacular name. — Kamamandji (Buton), Mansi (Muna).

Field notes. — Most of the birds in the series collected by DE HAAN have been obtained in a banyan-tree standing in a village near the seashore. A specimen from Muna has been collected in savannah.

The Loriquet was a common bird both in Buton and Muna but inconspicuous because of its small size and soft voice. Only if one is familiar with its habits, it can be found everywhere, alone or in small flocks, during the whole day. It was especially fond of the flowers of *Ceiba pentandra*, fruits of *Ficus religiosa* and of *Tamarindus indica*. The small, green bird can hardly be spotted among the foliage, even if its voice is heard. Stomachs always contained a sticky fluid, sometimes dripping from the bill in freshly shot birds. (H.) (B)

Cuculus saturatus saturatus BLYTH

Cuculus saturatus BLYTH, 1843, J. As. Soc. Bengal 12, (2), p. 942.—Nepal.

First record. — Muna, DE HAAN 1948.

Material. — Muna, Labasa, sex inc., 2.x.1948 (H.).

Measurements. — sex inc., wing 184; tail 131.

Weight. — sex inc., 83 gr (H.).

Colours. — Iris, inner circle brown, outer circle yellow; bill, upper mandible olive green, lower mandible black; legs yellow (H.).

Discussion. — Third primary longest; distance from 3rd to 10th primary 82 mm. In accordance with MAYR (List of New Guinea Birds, 1941, p. 71), who suggests that small specimens of this species (wing less than 190) are winter visitors belonging to the race *saturatus*, our specimen is also referred to this race.

Distribution. — In the Celebes region apparently only known from Muna. It breeds in S. E. Asia: Assam, Burma, S. China, and Formosa. The palearctic race *horsfieldi* is said to be a common winter visitor in Celebes (STRESEMANN, 1941).

Vernacular name. — Hulémanuke (Muna).

Field notes. — Mostly seen in the savannah, but also more than once observed flying low above the ground through dark forest. Was at first mistaken for a Sparrow-Hawk, especially since the birds were always surrounded by flocks of crying and scolding small passerine birds. (H.) (V)

Cacomantis variolosus fistulator STRESEMANN

Cacomantis variolosus fistulator STRESEMANN, 1940, J.f.O. 88, p. 450.—Wawa Karaeng, S. Celebes.

First record. — Buton, ELBERT 1909.

Material. — Buton, 1 ♂ ad., viii.1909 (E.).

Measurements. — Buton, 1 ♂ ad., wing 110; tail 131; bill from skull 18.

Discussion. — Olive greyish colouration of upper parts and rufous colouration of under parts is perfectly matched by specimens from N. Celebes. 11 males from N. Celebes in the collection VAN MARLE have the following wing measurements: 110, 110, 111, 111, 111, 112, 113, 113, 115, 115, 115 (VAN MARLE). Hence, the measurements of our Buton male do not differ from those from N. Celebes. According to STRESEMANN (l.c.), N. Celebes birds (*virescens*) are smaller than those from C., S., and S. E. Celebes (*fistulator*). The male from Buton agrees with the minimum measurement of STRESEMANN's southern series, which is given as: wing, ♂, 111-124, against 108-119 mm in N. Celebes. As a whole, *fistulator* seems at its best a very poor race.

Distribution. — A widely spread species in the Indo-Australian Archipelago, occurring also in Celebes and Buton, but it has not yet been recorded from Muna. (V)

Surniculus lugubris musschenbroeki MEYER

Surniculus musschenbroeki MEYER, 1878, ROWLEY's Orn. Misc. 3, p. 164.—Batjan Island, N. Moluccas.

First record. — Buton, ELBERT 1909.

Material. — Buton, 1 ♂ ad., viii.1909 (E.).

Measurements. — Buton, 1 ♂ ad., wing 129; lateral tail feathers 125; median tail feathers 114; bill from skull 23; tarsus 17.

Discussion. — This single Buton specimen was compared with one adult male said to originate from Batjan (see below), one adult bird from N. Celebes, and one adult female from Kulawi, C. Celebes. It agreed with these birds in almost every respect. Although it was practically identical with the Batjan bird, it differed from the Celebes specimens by having a slightly more pronounced greenish gloss on the wings and by being duller

purplish on head and under-parts. Measurements do not seem to differ noticeably. The following measurements may be of interest:

(1) Batjan ("Natur Museum Senckenberg", Frankfurt) — 1 ♂, wing 129.5; lateral tail feathers 129; median tail feathers 119; bill from skull 24; tarsus 16.

(2) N. Celebes (Leiden Museum) — ad., wing 131.5; lateral tail feathers moulting, median tail feathers 122; bill 24.

(3) Kulawi, C. Celebes (coll. KAUDERN, in Leiden Museum) — 1 ♀, wing 135; lateral tail feathers 142.5; median tail feathers 127; bill 25; tarsus 16.

Distribution. — Probably the whole of Celebes; Buton. It seems to be a rare bird and specimens are only available from the northern and central parts of Celebes. From the S. E.-peninsula a few field observations by HEINRICH are available (STRESEMANN, 1940). It is unknown from Muna. There is some disagreement regarding the type locality of this species. At present only 3 specimens are known, said to be taken on Batjan: (1) MEYER's type: (2) ♀, collected by PLATEN in 1892 or 1893 (NEHRKORN, J.f.O. 42, 1894, p. 158); (3) ♂, collected by KÜKENTHAL in 1894 (VON BERLEPSCH, Abh. Senckenb. naturf. Ges. 25, 1901, p. 314; this specimen was seen by me). Some doubt has arisen concerning the exact origin of these specimens, which might as well have come from Minahasa in N. Celebes. On the other hand, KÜKENTHAL's specimen, said to originate from Batjan, is dated 1.vi.1894 and a specimen of *Megapodius f. freycinet,* which does not occur in Celebes, has the same date of collecting. A specimen of "*Cacomantis insperatus*" (= *C. variolosus oblitus*) was collected one day earlier (31.v.1894), whereas one of *Accipiter cirrhocephalus erythrauchen* (not occurring in Celebes) is dated 2.vi.1894, being one day after the collecting of *Surniculus*. Thus, the locality "Batjan" cannot be neglected, although the occurrence of the species in this island is very remarkable. Perhaps it has reached this island from N. Celebes by casual flight oversea. (V)

Eudynamis melanorhyncha S. MÜLLER

Eudynamis melanorhyncha S. MÜLLER, 1843, Verh. Nat. Gesch. Ned. Overz. Bezitt., Land- en Volkenk., p. 176.—Gorontalo and Tondano, N. Celebes.

First record. — Muna, ELBERT 1909.

Material. — Muna, 2 ♂ ad., vii.-viii.1909 (E.); Muna, Labasa, 1 ♀ ad., 2.x.1948 (H.).

Measurements. — Muna, 1 ♂ ad., wing 210.5, 211; tail 196, 198; 1 ♀ ad., wing 212; tail 200.

Weight. — 1 ♀ ad., 209 gr (H.).

Gonads. — Largest egg-follicle of 1 ♀ ad., 1 mm (H.).

Colours. — Iris red; bill and legs black (H.).

Discussion. — All three specimens are in uniform black plumage. One of the males has a purplish blue gloss, the other a greenish gloss (correctly sexed?) like the female. Measurements are slightly larger than those mentioned by STRESEMANN (1940) of Celebes specimens. However, our Muna birds fall within the limits of variation of 26 specimens (♂ and ♀) from the Minahasa, N. Celebes, in the Amsterdam Museum, which I found to be 182-214, the smaller ones presumably being the females and the larger ones being the males.

Distribution. — An endemic species living in Celebes, Banggai, Sula, and Muna. It is unknown from Buton.

Vernacular name. — Katona mandara (Muna).

Field notes. — Only once observed near Labasa in a small flock, hunting through the tops of the lower trees (about 10 meters in height) along a forest-edge (H.). (V)

Scythrops novaehollandiae LATHAM

Scythrops novaehollandiae LATHAM, 1790, Index Orn. 1, p. 141.—New Holland.
Scythrops novaehollandiae, SIEBERS, 1930, Treubia 7, suppl., p. 278.—Muna, Buton.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, 1 ♂ imm., vii-viii.1909 (E.). Buton, 1 ♂ ad., viii. 1909 (E.); Buton, Bau-bau, 2 ♂ ad., 2 ♀ ad., 24-25.ix.1948 (H.).

Measurements. — Muna, 1 ♂ imm., wing 354; tail 171; bill from nostril 66. Buton, 3 ♂ ad., wing 357, 360, 367; tail 166, 167, 173; bill 75.5, 76.5, 78; 2 ♀ ad., wing 357, 357; tail 170, 171; bill 64, 65.

Gonads. — Testes of 2 ♂ ad., 10 × 14, 9 × 12 mm. Largest egg-follicle of 2 ♀ ad., 8, 12 mm (H.). The birds are apparently in breeding condition.

Colours. — Iris red, eye-lid purplish red; bill and legs grey (H.).

Discussion. — The immature male from Muna has broad buffish brown edges to the medium and greater upper wing-coverts and wing quills; flanks with many cross-bars. The adult birds showed no differences after a comparison with specimens from Celebes.

Distribution. — Widely distributed throughout the Australian and Papuasian region. In the Celebes region known from Celebes, Muna, Buton. In Buton this species is called the "rain bird", indicating that it should arrive at the beginning of the rainy season (Oct.-Nov.), the bird thus being suggested to be a migrant (from Australia). However, the dates of collecting (Aug.-Sept.) and the rather active state of the gonads in September

(which is about the end of the breeding period in Australia) indicate that the collected specimens are breeding birds from the Celebes region.

Vernacular name. — Kuréu (Buton).

Field notes. — This bird made itself very conspicuous by its shrill cries, which were often uttered in community. As they were often seen travelling in small flocks in search for fruit bearing fig trees ("waringins") they belonged to those birds which were best known to the natives of the islands. When feeding in dense trees — which usually took several hours — the birds were noiseless and hardly moved from their spots. Only then they could easily be approached and eventually collected (H.). (V)

Phoenicophaeus calorhynchus rufiloris HARTERT

Phoenicaphaeus calorhynchus rufiloris HARTERT, 1903, Nov. Zool. 10, p. 24.— S. W. Buton.

Phoenicophaeus calorhynchus rufiloris, STRESEMANN, 1940, J.f.O. 88, p. 460.— Buton.

First record. — Buton, KÜHN 1901.

Material. — Buton, 2 ♂, 1 ♀, viii.1909 (E.).

Measurements. — Buton, 2 ♂, wing 163, 178 mm; tail 27.5, 32 cm; bill from skull 39, —; tarsus 39.5, — mm; 1 ♀, wing 168 mm; tail 29 cm; bill 39; tarsus 39 mm.

Discussion. — Lores in all 3 specimens rufous, instead of grey, as in the races from Celebes. Head brownish grey, being closest to the race *calorynchus* from N. Celebes, of which 10 specimens could be examined; in birds from C. and S. Celebes the head is lighter and greyer. Throat and breast are rufous and seemed to have less of the dark chestnut colouration of Celebes specimens. Size remarkably small. Tendencies towards *rufiloris* were found by STRESEMANN (l.c.) in specimens from S. and S. E. Celebes.

Distribution. — Only known from Buton; closely related races occur in the whole of Celebes. The species has never been collected in Muna. (V).

Centropus celebensis rufescens (MEYER & WIGLESWORTH)

Pyrrhocentor celebensis rufescens MEYER & WIGLESWORTH, 1896, Abh. Mus. Dresden 2, p. 11.—Tonkean, E.Celebes.

Pyrrhocentor celebensis rufescens, HARTERT, 1903, Nov. Zool. 10, p. 24.—Buton.

Centropus celebensis rufescens, STRESEMANN, 1940, J.f.O. 88, p. 463.—Muna, Buton.

First record. — Muna, ELBERT 1909; Buton, KÜHN 1901.

Material. — Muna, 1 ♂, 2 ♀, vii-viii.1909 (E.). Buton, 1 ♂, 6 ♀, viii. 1909 (E.).

Measurements. — Muna, 1 ♂, wing 177; tail 265+; bill from skull 40; tarsus 46.5; 2 ♀, wing 174, 187; tail —, 287; bill 42, 42; tarsus 45, 47. Buton, 1 ♂, wing 176; tail 255+; tarsus 45; 6 ♀, wing 165, 166, 173, 183, 186, 190; tail 270, 282, 285, 287, 295, —; bill 39, 40, 42.5, 43.5, 43.5, 45; tarsus 45.5, 46, 46.5, 47, 47, 47.5.

Distribution. — This is an endemic species of Celebes, occurring also in Muna and Buton. It was not collected by DE HAAN, but R. C. ANDREWS collected a male on 13.xii.1909 on Labuan Blanda Island, Buton Strait (MAYR, in litt.). The typical race occurs in N. Celebes, *rufescens* living in the remaining part of the island and on Muna and Buton.

Field notes. — Not rare in Muna and Buton, living on the ground among low bushes. Not collected (H.). (V)

Centropus bengalensis sarasinorum STRESEMANN

Centropus bengalensis sarasinorum STRESEMANN, 1912, Nov. Zool. 19, p. 338.— Kalidupa, Tukang Besi Islands.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, 1 ♂ ad., 1 ♀ ad., 1 ♀ imm., vii-viii.1909 (E.). Buton, 3 ♂ ad., 2 ♀ imm., viii.1909 (E.).

Measurements. — Muna, 1 ♂ ad., wing 150.5; tail 193; bill from skull 35; tarsus 38; 1 ♀ ad., wing 175; tail 201; bill 30; tarsus 42; 1 ♀ imm., wing 171. Buton, 3 ♂ ad., wing 148, 150, 150.5; tail 183, 186, —; bill 33.5, 34.5, 37; tarsus 38.5, 39.5, 40; 2 ♀ imm., wing 169, 180.

Distribution. — The species is widely distributed throughout the Indo-Australian region, where it has developed several size-races. The present race inhabits Celebes, Muna, Buton, and the other surrounding islands, as also the Lesser Sunda Islands. (V)

Falco moluccensis occidentalis (MEYER & WIGLESWORTH)

Tinnunculus moluccensis occidentalis MEYER & WIGLESWORTH, 1896, Abh. Mus. Dresden, 2, p. 8.—Celebes.

Falco moluccensis occidentalis, SIEBERS, 1930, Treubia, 7, suppl., pp. 235-240.— Buton.

First record. — Buton, ELBERT 1909.

Material. — Buton, 1 ♂ ad., viii.1909 (E.).

Measurements. — Buton, 1 ♂ ad., wing 215; tail 139.

Discussion. — Upper parts as in specimens from N. Celebes, perhaps slightly paler. Crown like back and mantle. Under parts pale buff; tibial feathers immaculate. Dark spots above and below rather small. The specimen seems to agree with the description of birds from the Tukang Besi Islands, but the latter ones, according to MAYR, have longer wings: ♂

221, 225, 228, 235, 239 (Orn. Mon. Ber. 49, 1941, p. 45-47). The Buton male seems to be smaller than birds from N. Celebes, as is shown by the following measurements of birds from N. Celebes, taken in the Amsterdam Museum and from specimens in the collection VAN MARLE: ♂, wing 219, 221, 222, 222, 223, 231; tail 141, 143, 143, 146, 147, 150. According to MAYR (l.c.) 2 males from the Kalao-Djampea Islands are also very small: wing 216, 217.

Distribution. — Celebes, Buton, and neighbouring islands. R. C. ANDREWS collected an immature female in Tobea Island, northern Buton Strait on 14.xi.1909 (MAYR and DEIGNAN, in litt.). DE HAAN observed Kestrels on Muna, but did not succeed in collecting specimens. Related races occur in the Moluccas, Lesser Sunda Islands and Java.

Field notes. — Kestrels were observed in very small numbers on Buton, as well as on Muna (H.). (V)

Spizaëtus lanceolatus TEMMINCK & SCHLEGEL

Spizaetus lanceolatus TEMMINCK & SCHLEGEL, 1844, Fauna Japonica, p. 7.—N. Celebes.

First record. — Muna, DE HAAN 1948; Buton, DE HAAN 1948.

Material. — Muna, Labasa, 1 (♂) ad., 8.x.1948. Buton, Wamingkoli River, 1 ♂ juv., 29.ix.1948 (H.).

Measurements. — Muna, 1 (♂) ad., wing 350; tail 245. Buton, 1 ♂ juv., wing 350; tail 245.

Gonads. — Tests of 1 ♂ juv., 4 × 10 mm (H.).

Colours. — Iris and legs yellow; bill black; cere in ad. ♂ black.

Discussion. — In the juvenile bird head, under-parts, tarsal feathering and under tail coverts are pure white.

Distribution. — Celebes, Muna, Buton; also Peling and Sula Islands. An endemic species of the Celebesian region.

Vernacular name. — Boankwéa (Muna), Bunéapada (Buton).

Field notes. — Only found in forests and in the mountains. When hidden in the top of a high forest tree its presence was usually indicated by the warning cry of the Togé (*Coracias temminckii*). Preferred hunting in grass-covered clearings, rather than in the forest itself (H.). (V)

Spilornis rufipectus rufipectus GOULD

Spilornis rufipectus GOULD, 1857, Proc. Zool. Soc. London, p. 222.—Macassar, S. Celebes.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, 1 ♀ ad., vii-viii.1909 (E.); Muna, Labasa, 4 ♂ ad., 7-8.x.1948 (H.). Buton, 1 ♀ juv., viii.1909 (E.).

Measurements. — Muna, 4 ♂ ad., wing 322, 328, 332, 333; tail 208, 213, 220, 223; 1 ♀ ad., wing 333; tail 214. Buton, 1 ♀ juv., wing 338; tail 230.

Gonads. — Testes of 3 ♂ ad., 3 × 9, 4 × 10, 7 × 12 mm (H.).

Colours. — Iris and legs yellow; bill black, cere yellow (H.).

Discussion. — No differences in plumage and dimensions could be found with birds from N. Celebes.

Distribution. — The species is endemic in the Celebesian region. The race *rufipectus* is known from Celebes, Muna, Buton, and Saleyer; another race occurs in the Peling, Banggai, and Sula Islands (STRESEMANN, 1940).

Vernacular name. — Boan (Muna).

Field notes. — Common along forest-edges and in *Tectona* forests. Easily noticed by its shrill call. In wet parts of the forest it was often seen in company with *Ciconia* (*Dissoura*) *episcopus*, both species mainly preying upon snakes. It was one of the most conspicuous birds of prey that was attracted by forest- and savannah-fires, which forced all reptiles and small mammals to leave their retreats and flee in large numbers. (H.) (V)

Elanus caeruleus hypoleucos GOULD

Elanus hypoleucus GOULD, 1859, Proc. Zool. Soc. London, p. 127.—Macassar, S. Celebes.

First record. — Muna, DE HAAN 1948.

Material. — Muna, Labasa, 1 ♂ ad., 5.x.1948; 2 sex inc., 6-9.x.1948 (H.).

Measurements. — Muna, 1 ♂ ad., wing 309; tail 138. Buton, 2 sex inc., wing 302, 303; tail 135, 136.

Weight. — 1 ♂ ad., 241; 2 sex inc., 376, 317 gr (H.).

Gonads. — Testes of 1 ♂ ad., 7 × 3 mm (H.).

Colours. — Iris red; bill black, cere yellow; legs yellow (H.).

Distribution. — Apart from Celebes and Muna, this race has a wide distribution in the western parts of Indonesia, as also in the Philippines. Not known from Buton.

Vernacular name. — Taga (Muna).

Field notes. — The favourite habitat of this bird were savannahs and extensive grass fields ("alang-alang"), where it was rather common, usually flying in pairs or in small groups. Its presence was easily established by its mournful cry. It was seen preying upon large green grasshoppers that were driven out of the trees and subsequently caught in flight (H.). (V)

Haliastur indus ambiguus (BRÜGGEMANN)

Haliaetus indus ambiguus BRÜGGEMANN, 1876, Abh. naturw. Ver. Bremen 5, p. 45. —N. Celebes.

First record. — Muna, DE HAAN 1948; Buton, ELBERT 1909.

Material. — Muna, Labasa, 3 ♂, 3 ♀, 2 sex inc., 7-9.x.1948 (H.). Buton, 1 ♀, viii.1909 (E.).

Measurements. — Muna, 3 ♂, wing 392, 394, 396; tail 178, 176, 192; 3 ♀, wing 394, 405, 415; tail 184, 198, 200; 2 sex inc., wing 372, 377; tail 192, 196. Buton, 1 ♀, wing 395; tail 188.

Weight. — 1 ♂, 420; 2 ♀, 520, 520; 2 sex inc., 400, 443 gr (H.).

Gonads. — Testes of 2 ♂ ad., 9 × 17, 8 × 14; 1 ♂ sub-ad., 5 × 9 mm. Largest egg-follicle of 2 ♀ ad., 2, 2; 1 ♀ sub-ad., 2 mm (H.). Some of these specimens seem to be in breeding condition.

Colours. — Iris dark brown; bill yellow, cere greyish; legs pale yellow (H.).

Discussion. — All specimens collected in October are partly or wholly in a very worn plumage; four of them are sub-adults, possessing strongly abraded juvenile primaries and inner secondaries. In all specimens the head is white, without, or with only a few slight indications of dark shaft stripes on the feathers of head and breast.

Distribution. — Celebes, Muna, Buton. Other races occur throughout the whole of S. E. Asia and Australia.

Vernacular name. — Boalemba (Muna), Bunéa (Buton).

Field notes. — Very common scavenger in Labasa (Muna) and Baubau (Buton). It assembled in great numbers around dead or recently shot animals, together with *Haliaeetus leucogaster*. The regular fires in savannahs and forests also attracted these eagles for easy hunt on small mammals, reptiles, and insects, which were observed fleeing before the rapidly moving fire. During these emotional hunting parties they were accompanied by *Spilornis rufipectus* and *Ciconia* (*Dissoura*) *episcopus* (H.). (V)

Pernis celebensis celebensis WALLACE

Pernis cristatus var. *celebensis* WALLACE, 1868, Ibis, p. 17.—Celebes.

First record. — Muna, DE HAAN 1948.

Material. — Muna, Labasa, 1 ♀ ad., 8.x.1948 (H.).

Measurements. — Muna, 1 ♀ ad., wing 369; tail 247; tarsus 55; middle toe without claw 52.5.

Gonads. — Largest egg-follicle of 1 ♀ ad., 4 mm (H.).

Colours. — Iris and legs yellow; bill black, cere yellow (H.).

Discussion. — No difference found after comparison with specimens from N. Celebes.

Distribution. — Celebes, Muna, and Peling Islands. Not known from Buton. A second race occurs in the Philippine islands.

Vernacular name. — Boan (Muna) (See also: *Spilornis rufipectus*).

Field notes. — Collected in Djati (*Tectona*) forest near Labasa (Muna), at 10 m altitude (H.). HEINRICH found this species in Celebes in the forests of the middle mountains (STRESEMANN, 1940). (V)

Accipiter griseiceps (SCHLEGEL)

Astur griseiceps SCHLEGEL, 1862, Mus. Pays Bas, *Astures*, p. 23.—N. Celebes.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, 1 ♀ ad., vii-viii.1909 (E.). Buton, Bau-bau, 1 ♂ ad., 24.ix.1948 (H.); 1 ♀ ad., 29.ix.1948 (H.); 1 ♀ juv., viii.1909 (E.).

Measurements. — Muna, 1 ♀ ad., wing 205.5; tail 160; tarsus 56. Buton, 1 ♂ ad., wing 178; tail 147; middle toe without claw 28; 1 ♀ juv., wing 187; tail 158.5; tarsus 57; middle toe 30; 1 ♀ ad., wing 205, tail 165, tarsus 56, middle toe 33.

Weight. — 1 ♂ ad., 212; 1 ♀ ad., 299 gr (H.).

Gonads. — Testes of 1 ♂ ad., 5 × 8 mm. Largest egg-follicle of 1 ♀ ad., 1 mm (H.).

Colours. — Iris and legs yellow; bill black (H.).

Discussion. — No material difference could be found after comparison with 8 adult and 11 juvenile birds from N. Celebes in the Leiden Museum and in the collection VAN MARLE. The colouration of the upper parts is rather variable and apparently subject to considerable fading throughout the season. The adult Buton birds from September are in heavy moult. Birds from Muna and Buton seem to be slightly larger at the average than those from N. Celebes:

Buton	♂	ad., wing 178; tail 147.
N. Celebes	♂	ad., wing 171, 173, 174, 175, 178, 179; tail 134, 137, 138, 140, 143, 145.
Muna-Buton	♀	ad., wing 205, 205.5; tail 160, 165.
N. Celebes	♀	ad., wing 182, 182, 183, 192, 196, 198, 199, 205; tail 140, 141, 144, 152, 153, 156, 156, 158, 160.

Distribution. — Celebes, Muna, Buton. Also Togian Islands (Malenge), Bay of Tomini, N. Celebes, where a juvenile male was collected by MENDEN on 24.xi.1939 (Buitenzorg Museum). It is an endemic species of the Celebesian region with superspecific relations to the Malaysian and

Indian *Accipiter trivirgatus* (see: VAN MARLE & VOOUS, Limosa, 19, 1946, p. 15-23).

Vernacular name. — Kelo-kelo (Buton) (See also: *Accipiter rhodogaster*).

Field notes. — Collected in kampongs near seashore. Much feared by the native people because of its habit of preying upon fowl chickens. It employed the same hunting methods as the European Goshawk (*Accipiter gentilis*), hiding in thick cover or trees, waiting for a favourable moment to attack its prey after a sudden rapid flight and taking it by surprise (H.) See also COOMANS DE RUITER's field notes in VAN MARLE & VOOUS, 1946 (l.c.). (V)

Accipiter soloënsis (HORSFIELD)

Fako Soloënsis HORSFIELD, 1821, Trans. Linn. Soc. 13, p. 137.—C. Java.

Astur soloënsis, HARTERT, 1903, Nov. Zool. 10, p. 21.—Buton.

First record. — Buton, KÜHN 1901.

Material. — No specimens examined. The species was not collected by ELBERT, nor by DE HAAN, but KÜHN secured a ♀ on S. W. Buton on 25.xi.1901.

Distribution. — A common winter visitor from E. Asia to the Philippines, Celebes, and the Greater Sunda Islands. Noticeably common in N. Celebes. (V)

Accipiter trinotatus BONAPARTE

Accipiter trinotatus BONAPARTE, 1850, Consp. Av. I, p. 33.—N. Celebes.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, 1 ♂ ad., 1 ♀ ad., vii-viii.1909 (E.). Buton, 1 ♂ ad., 1 (♀) ad., viii.1909 (E.).

Measurements. — Muna, 1 ♂ ad., wing 153.5; tail 127; tarsus 52; middle toe without claw 25; 1 ♀ ad., wing 171.5; tail 135.5; tarsus 54; middle toe 26. Buton, 1 ♀ ad., wing 158; tail 134; tarsus 48.5; middle toe 25; 1 (♀) ad., wing 165.5; tail 143; tarsus 52; middle toe 25.5.

Discussion. — The specimens have been compared with 10 adults from N. Celebes, from which they differ by having the upper parts of a lighter bluish grey tinge. The difference may be the result of wear and bleaching, but this is not certain. As the S. Celebes race *haesitandus* seems to be distinguishable in the juvenile plumage only, and as no juveniles from Muna or Buton were available, the species is named here binominally. Measurements of Muna and Buton birds agree with those from N. Celebes.

Distribution. — Celebes, Muna, Buton. It is an endemic species of the Celebesian region. (V)

Accipiter rhodogaster butonensis VOOUS, subspec. nov.

Accipiter rhodogaster, HARTERT, 1903, Nov. Zool. 10, p. 21.—Buton.

Accipiter rhodogaster rhodogaster, STRESEMANN, 1940, J.f.O. 88, p. 487.—Muna, Buton.

First record. — Muna, ELBERT 1909; Buton, KÜHN 1901.

Diagnosis. — Under parts paler than in *A. r. rhodogaster* and sides of the head lighter grey.

Type of subspecies. — 1 ♀ ad., Buton, viii.1909. ELBERT coll. In collection Zoological Museum Amsterdam nr. 8702.

Material. — Muna, 2 ♂ ad., 1 ♀ juv., vii-viii.1909 (E.). Buton, 1 ♂ ad., 22.viii.1909; 1 ♂ ad., viii.1909 (E.); Buton, Bau-bau, 1 ♀ juv., 14.x.1948 (H.). This material includes one ♂ ad. from Muna and one ♂ ad. from Buton (E.) from the "Natur Museum Senckenberg", Frankfurt, Germany.

Measurements. — Muna, 2 ♂ ad., wing 167.5, 172.5; tail 117, 124; tarsus 52, 52.5; middle toe without claw 29.5, 32; 1 ♀ juv., wing 202.5; tail 147.5; tarsus 61; middle toe 39.5. Buton, 1 ♂ ad. and 1 ♂ juv., wing 175 and 165; tail 123 and 122; tarsus 51.5 and 54; middle toe 31 and 32; 1 ♀ ad. and 1 ♀ juv., wing 213.5 and 204; tail 157 and 158; tarsus 61 and 61.5; middle toe 40 and 43.

Weight. — 1 ♂ juv., 113; 1 ♀ juv., 264 gr (H.).

Gonads. — Testes of 1 ♂ juv., 2 × 4 mm. Largest egg-follicle of 1 ♀ juv., 1 mm (H.).

Colours. — Iris yellow, eye-lid brownish yellow; bill black, cere greenish yellow; legs yellow (H.).

Discussion. — Four adult birds from Muna and Buton have the under parts paler and more vinaceous red, less brick red, than 13 adult birds from various parts of Celebes. Sides of the head lighter grey. The upper parts tend to be on the average slightly lighter grey. The new adult feathers from an immature bird from Muna and one from Buton showed the same characteristics as the adults.

Distribution. — This is an endemic species of the Celebes region. The race *butonensis* occurs in Muna and Buton. The race *rhodogaster* occurs in Celebes, whereas the race *sulaensis* lives in Peling-Banggai and Sula Islands.

Vernacular name. — Kélo-kélo (Buton) (See also: *Accipiter griseiceps*).

Field notes. — Collected in kampong near seashore (H.). (V)

Pandion haliaetus melvillensis MATHEWS

Pandion haliaetus melvillensis MATHEWS, 1912, Austr. Av. Rec. 1, p. 34.—Melville Island, Northern Territory, Australia.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, 1 ♂ ad., vii-viii.1909 (E.). Buton, Bau-bau, 1 ♀ ad., 23.ix.1948 (H.); Buton, 1 ♀ ad., viii.1909 (E.).

Measurements. — Muna, 1 ♀ ad., wing 425. Buton, 1 ♂ ad., wing 424; 1 ♀ ad., 454.

Gonads. — Testes of 1 ♂ ad., 10 × 10 mm (H.).

Colours. — Iris yellow; bill grey; legs whitish (H.).

Discussion. — The geographical arrangement of geographical races of this species is unsatisfactorily known. Because of their predominatingly pure white heads and rather small measurements, Celebes Ospreys are usually referred to the N. Australian race. However, Australian measurements may be smaller than those from Celebes! Wing lengths of 3 specimens from N. Celebes in the collection VAN MARLE-COOMANS DE RUITER: ♂, 422, 415; ♀, 442.

Distribution. — Celebes, Muna, Buton. This, or a closely related race, occurs throughout the whole Indo-Australian Archipelago.

Vernacular name. — Kwèa (Buton).

Field notes. — Only few individuals were seen along the coast of Buton. The claws of these birds were considered a useful talisman by native fishermen. (H.) (V)

Ciconia episcopus episcopus (BODDAERT)

Ardea Episcopus BODDAERT, 1783, Tabl. Pl. Enlum. p. 54, ex DAUBENTON, pl. 906.— Coromandel coast.

Dissoura episcopus neglecta, STRESEMANN, 1941, J.f.O. 89, p. 2.—Muna.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, 2 ♂, vii-viii.1909 (E.); Muna, Wamingkoli, 1 ♀, 10.x.1948 (H.); Buton, 2 ♂, 1 ♀, viii.1909 (E.).

Measurements. — Muna, 2 ♂, wing 488, 474; tail 201, 198; culmen 159, 153; tarsus 157, 149; 1 ♀, wing 454; tail 187; culmen 143; tarsus 148; Buton 2 ♂, wing 475, 465; tail 199, 178; culmen 152, 148; tarsus 153, 153; 1 ♀, wing 468; tail 202; culmen 144; tarsus 147.

Gonads. — Muna, largest egg-follicle of 1 ♀, 2 mm. (H.)

Colours. — 1 ♀ Muna, iris darkbrown, bill and feet red and black. (H.)

Discussion. — The genus *Dissoura* CABANIS 1850 was united with *Ciconia* BRISSON 1760 by DELACOUR (Zoölogica 1945, 30, p. 105). There is no topotypical material of *C. episcopus* at my disposal, but according to CHASEN (Bull. Raffl. Mus. 1935, 11, p. 53) the race *neglecta* FINSCH (Ornith. Monatsber. 1904, 12, p. 94) cannot be separated from the nominal race.

Distribution. — Vide PETERS (Checkl. Birds World 1931, 1, p. 128), CHASEN (l.c.) and STRESEMANN (l.c.). The locality Buton has up till now not been recorded in literature.

Vernacular name. — Ndao (Muna).

Field notes. — The only specimen obtained by DE HAAN was collected on rocks near the shore clad with mangrove vegetation. Contents of stomach: small sea snakes.

Locally rather common on the seashore, often feeding on sea-snakes. Near Labasa the birds could be observed regularly, circling high overhead. After grass-fires the birds could be seen stalking on the black-burned fields. (H.) (B)

Ardea sumatrana sumatrana RAFFLES

Ardea sumatrana RAFFLES, 1822, Trans. Linn. Soc. London 13, pt. 2, p. 325.— Sumatra.

First record. — Muna, DE HAAN 1948.

Material. — Muna, Wamingkoli, 1 ♂ imm., 10.x.1948 (H.).

Measurements. — 1 ♂ imm., wing 445; tail 170; bill from gape 184; tarsus 154.

Gonads. — Testes of 1 ♂ imm., 4 × 10 mm. (H.)

Colours. — Iris yellow; bill black and yellow. Colour of feet is recorded by DE HAAN as yellow but at the collected specimen the feet are black all over.

Discussion. — The specimen collected by DE HAAN seems to be a young bird at the end of the first year, if compared with the description by MATHEWS (Birds of Australia, 1913 - 1914, 3, p. 419 & Pl. 184). Not regarding the difference in age, it agrees rather well with a young bird in the second year from Peutjang I. (Meeuwen-eiland) in our collection. Both specimens mentioned here present a white throat which is equally white in an adult female from Gaju Luös, Acheen, N. Sumatra. In a head of a bird from the Mamberamo, N. New Guinea, the throat is light brownish grey. I think the birds from New Guinea deserve a careful study, but the species seems to be rare everywhere.

Distribution. — In the Celebes region only recorded from the Northern Peninsula and Wawo (S. E. Celebes). Muna is a new record. For distribution vide PETERS (Checkl. Birds World, 1931, 1, p. 98).

Vernacular name. — Buneapada (Muna).

Field notes. — Shot on a coral reef at the coast.

This large heron is not common. Could be seen not only on inland-lakes but also on the seashore. When disturbed, they took wing and alighted again not far away in a tree. Seldom observed in daytime, mostly present at dusk on the lakes. (H.) **(B)**

Egretta sacra sacra (GMELIN)

Ardea sacra GMELIN, 1789, Syst. Nat. 1, pt. 2, p. 640.—Tahiti.

Ardea novae-guineae, S. MÜLLER, 1840, Verh. Nat. Gesch. Ned. Overz. Bezitt., Land & Volkenk. p. 90.—Buton.

Demiegretta sacra, MEYER & WIGLESWORTH, 1898, Birds of Celebes, 2, p. 821.—Buton.

Demiegretta sacra, SIEBERS, 1930, Treubia 7, Suppl., p. 212.—Buton, Muna.

Demiegretta sacra, STRESEMANN, 1941, J.f.O. 89, p. 7.—Muna.

First record. — Muna, ELBERT 1909; Buton, S. MÜLLER 1828.

Material. — Muna, 1 ♀ (grey phase), viii.1909 (E.); Buton, 1 ♂ (white phase), 1 ♀, 1 ♂ imm., 1 ♀ imm. (grey phase), vii-viii.1909 (E.).

Measurements. — Muna, 1 ♀, wing 271; tail 95; culmen 78; tarsus 70; Buton 1 ♂, wing 285; tail 98; culmen 82; tarsus 80; 1 ♀, wing 274; tail 92; culmen 74; tarsus 72; 1 ♂ imm. wing 266; tail 92; culmen 77.5; tarsus 75.5; 1 ♀ imm., wing 264; tail 91; culmen 74; tarsus 68.

Gonads. — The adult birds collected by ELBERT are wearing breeding plumage.

Discussion. — The birds mentioned here have been treated previously by SIEBERS (l.c.).

Distribution. — Vide MAYR & AMADON (Am. Mus. Nov. 1941, 1144, p. 3). In Celebes the species seems to be known only from the Northern peninsula (vide STRESEMANN l.c.). In our collection only birds from Minahassa are present.

Field notes. — Common on coral-reefs. (H.) **(B)**

Butorides striatus javanicus (HORSF.)

Ardea Javanica HORSFIELD, 1821, Trans. Linn. Soc. London 13, p. 190.—Java.

Ardea scapularis, S. MÜLLER, 1840, Verh. Nat. Gesch. Ned. Overz. Bezitt., Land & Volkenk. p. 91 & note.—Small island near Buton.

Butorides javanica, MEYER & WIGLESWORTH, 1898, Birds of Celebes, 2, p. 851.—Small island off Buton.

Butorides javanica ? subsp., HARTERT, 1903, Nov. Zool. 10, p. 38.—S. W. Buton.

Butorides striatus javanicus, STRESEMANN, 1941, J.f.O. 89, p. 9.—Buton, Muna.

First record. — Muna, ELBERT 1909; Buton, S. MÜLLER 1828.

Material. — Muna, 1 ♂, vii-viii.1909 (E.); Buton, 3 ♂, 1 ♀, vii.1909 (E.); Buton, Bau-bau, 1 sex inc., 25.ix.1948 (H.).

Measurements. — Muna, 1 ♂, wing 168; tail 66; culmen 59.8; tarsus 44; Buton, 3 ♂, wing 181, 175, 169; tail 68, 67, 65; culmen 58.8, 56.9, —; tarsus 48, 46.5, 46; 1 ♀, wing 167; tail 63; culmen 55.8; tarsus 43.5; 1 sex inc., wing 172; tail 65; culmen 59.7; tarsus 49.

Weight. — 1 sex inc. 194 gr. (H.)

Gonads. — Collected at nest. (H.)

Colours. — Iris and feet yellow, bill black. (H.)

Discussion. — MAYR (Emu 1943, 43, pp. 3-7) considered birds of Celebes and Kangean as probably belonging to the same race as topotypical Javan birds. STRESEMANN (l.c.) has the same opinion, but according to HARTERT (l.c.) there is a difference in size between birds of Celebes, Tukang Besi Is. and Buru on the one hand and birds from Borneo, Java and the Lesser Sunda Is. on the other hand. In 1920 (Vögel Paläarct. Fauna 2, p. 1250) however HARTERT united all the birds of Malaysia in the subspecies *B. javanicus* (HORSF.). I compared the series from Muna and Buton with 5 adult birds from Java, 3 from Celebes, 4 from Billiton and 3 from Borneo. The results of this comparison are given in the table (p. 87).

Dr MAYR (in litt.) drew my attention to the sexual dimorphism that is present in this species. According to MAYR the differences in colour given in the table for the birds from Java hold true for females, but hardly for males. Males seem to be darker than females and to present narrower buffy edges of the wingcoverts. The vent in Dr MAYR's material appears actually more buffy in Javan than in Celebes birds. Males, according to Dr MAYR, hold an intermediate position and both Dr MAYR and I came to the conclusion that there is no sufficient reason to consider both populations as subspecifically distinct. Our birds from W. Borneo do not fit very well in the scheme given by MAYR (l.c.).

Distribution. — See literature as cited under discussion and PETERS (Checkl. Birds World 1931, 1, p. 106).

Vernacular name. — Koto-koto (Buton).

Field notes. — DE HAAN collected a bird that was nesting in a tamarind tree.

A rather common bird from the seashore and coral-reefs. The nest is made from a handful of twigs, only loosely interwoven. (H.) **(B)**

Anas gibberifrons gibberifrons S. MÜLLER

Anas (Mareca) gibberifrons S. MÜLLER, 1842, Verh. Nat. Gesch. Ned. Overz. Bezitt., Land & Volkenk., p. 159.—Makassar & Menado, Celebes.

Anas gibberifrons gibberifrons, STRESEMANN, 1941, J.f.O. 89, pp. 15-16.— Muna.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Butorides striatus c. subsp.

Nr.	Sex	Locality	Wing	Culmen	
17125	(♂)	Muna	168	59.8	Darker breast, slightly more buffy vent, somewhat narrower margins to upper wing coverts.
17124	(♂)	Buton	181	56.9	
17126	(♂)	Buton	175	58.8	
17127	(♂)	Buton	169	—	
17128	(♀)	Buton	167	55.8	
19144	?	Buton	172	59.7	
17129	♂	Bone, Celebes	166	57.9	
17130	♂	Bone, Celebes	167	57.5	
17131	♀	Bone, Celebes	165	58.2	
20	♀	P. Edam, Batavia Bay, Java	168	62.5	Lighter breast, less buffy vent, somewhat broader margins to upper wing coverts. Females!
48	♀	P. Edam, Batavia Bay, Java	165	60.5	
65	♀	P. Edam, Batavia Bay, Java	160	57.2	
17135	♀	Tdj. Priok, W. Java	168	60.8	
17136	♀	Muara Angke, Batavia, W. Java	165	64.2	
17140	♂	W. Billiton	170	62.2	Colour slightly paler than in Javan specimens.
17137	♀	Billiton	167	58.2	
17138	♀	Billiton	180	64.0	
17139	♀	Billiton	167	59.1	
17133	♂	P. Peniti, W. Coast Borneo	177	—	Exactly like Javan specimens, darker than in Billiton birds.
17141	♂	Ketapang, W. Borneo	175	60.9	
17134	♀	P. Peniti, W. Coast Borneo	170	64.5 Sub-ad.	
10638	♂	Mt. Löser, Atjeh, N. Sumatra	188	66.3	det. CHASEN, Treubia 18 Suppl., as *B. str. amurensis*. Dark, with a heavy greenish gloss on back. Sub-adult specimen.
17142	♂	North Pagai I., W. of Sumatra	178	60.0	sub. ad.
4141	♀	Talaud Is.	170	61.0	Fits exactly in subsp. 3, cf. Emu 43, 1943 (= *carcinophilus* OBERH.?)

Material. — Muna, Labasa, 1 sex inc. ad., 2 ♂ imm., 2 sex inc. imm., 1-4.x.1948 (H.); Buton, 1 ♂, 1 ♀, viii.1909 (E.).

Measurements. — Buton, 1 ♂, wing 180; tail 91; culmen 39.3; 1 ♀ wing 177; tail 87; culmen 35.5; Muna, 1 sex inc. ad., wing 180; tail 91; culmen 39.4; 2 ♂ imm., wing 153, 145; tail 81, 78; culmen 34.2, 33.7; 2 sex inc. imm., wing 171, 138; tail 79, 73; culmen 36.7, 34.9.

Weight. — 2 ♂ imm. 222, 220 gr; 2 sex inc. imm. 173, 171 gr. (H.)

Gonads. — Testes of 2 ♂ imm. 1 × 4 mm. Both birds are moulting. (H.)

Colours. — Iris brown, feet black, bill black with more or less large pink spots at lower bill. (H.)

Discussion. — Most of the birds from Muna are in moult. Both birds from Buton are rather small if compared with the measurements given by RIPLEY (Auk 1942, 59, p. 95), but in 19 other specimens in our collection from Celebes, Java, Lombok and Flores several are below these measurements.

Distribution. — A discussion of geographical distribution and affinities is given by RIPLEY (l.c.) and DELACOUR & MAYR 1945, Wilson Bull. 57, p. 20 & 39.

Vernacular name. — Bèbènaoé (Muna).

Field notes. — All the birds collected by DE HAAN in Muna were obtained at a water-hole.

Breeding in Muna. Common on small lakes grown with rushes, where during the wet monsoon often flocks of hundreds of birds could be observed. In the afternoon the birds roosted in Teak trees (*Tectona*). In October many birds were flightless due to wing-moult and could be caught by hand. (H.) (B)

Rallus (Hypotaenidia) philippensis LINNAEUS

Rallus philippensis LINNAEUS, 1766, Syst. Nat. 1, p. 263.—Philippine Islands.

First record. — Buton, ELBERT 1909.

Material. — Buton, 1 ♀, viii.1909 (E.).

Measurements. — Buton, 1 ♀, wing 140,5; bill from lateral feathering 27; tarsus 38.5.

Discussion. — Compared with 8 specimens from N. Celebes belonging to the race *chandleri* (MATHEWS) the Buton specimen has the upper parts, including back and tail, much lighter, more olive hair brown; head and neck are brighter rufous; the grey of the breast is lighter and the ventral dark bars are less regular, narrower, and less deep black.

Distribution. — Many races of this widely spread species occur in the islands and archipelagos between the Philippines and New Zealand.

Its racial differentiation is very poorly understood. The species is not yet known from Muna. (V)

Rallus (Hypotaenidia) torquatus remigialis STRESEMANN

Hypotaenidia torquata remigialis STRESEMANN, 1936, Ibis, p. 368.—Lalolei, S. E. Celebes.

First record. — Muna, DE HAAN 1948.

Material. — Muna, Wamingkoli, 1 ♂, 23.ix.1948 (H.).

Measurements. — Muna, 1 ♂, wing 168; exposed culmen 43.5; tarsus 56.

Weight. — 1 ♂, 24 gr (H.).

Gonads. — Testes, 2 × 4 mm (H.).

Colours. — Iris red; bill black; feet blackish olive brown (H.).

Discussion. — It seems that this single specimen corresponds with the description of the race *remigialis* from S. E. Celebes. It is slightly larger than the N. Celebes race *celebensis*, agreeing with the wing measurements given by STRESEMANN (l.c.) : *celebensis*, ♂, 149-158; *remigialis*, ♂, 167. Our specimen has the inner webs of the wing quills more rusty coloured, their black and white markings less pronounced, smaller, and less regular than a specimen from N. Celebes.

Distribution. — The species inhabits the Philippines, Celebes, Muna, Tukang Besi Islands, Peling, Sula, Salawatti, and New Guinea. The race *remigialis* occurs in S. E. Celebes and Muna. It has not yet been found in Buton.

Vernacular name. — Totokeo (Muna). (See also: *Amaurornis phoenicura*).

Field notes. — The specimen was collected in *Nipa* palm vegetation along a small river. Birds probably belonging to this species were twice observed at the outer edge of the mangrove along the coast of Buton, feeding on the mud-flats at low tide. They seemed to be rare and were very shy. (H.) (V)

Amaurornis phoenicura variabilis STRESEMANN (fig. 1).

Amaurornis phoenicura variabilis STRESEMANN, 1936, The Ibis (13) 6, p. 369.—Makassar, S. Celebes.

Amaurornis phoenicurus, HARTERT, 1903, Nov. Zool. 10, p. 37.—Buton.

Amaurornis phoenicurus, SIEBERS, 1930, Treubia 7, suppl., p. 196-198.—Buton.

First record. — Buton, KÜHN 1901.

Material. — Buton, 1 ♂, 2 ♀ (one ♀ apparently wrongly sexed as ♂), viii.1909 (E.) ; Buton, Wamingkoli, 1 ♂, 1 ♀, 29.ix.1948, 2 ♂, 20.x.1948 (H.).

Measurements. — Buton, 4 ♂, wing 162, 162.5, 167, 169; bill from base of frontal shield 36.5, 38.5, 38.5, 39; tarsus 56, 57, 58,.61.5; 3 ♀, wing 147, 148, 149; bill 33, 33, 34; tarsus 49, 52, 53.5.

Weight. — 3 ♂, 214, 212, 276; 1 ♀, 168 gr (H.).

Gonads. — Testes of 3 ♂, 3 × 5, 4 × 6, 2 × 4 mm. Largest egg-follicle of 1 ♀, 1 mm. (H.)

Colours. — Iris red brown; bill light green, frontal shield orange brown, but grey in ♂ from 20.x; feet yellow (H.).

Discussion. — There is a great variability in the extension of the black colouration on the head, as is also the case in Celebes birds of this species. However, in Buton the extremes almost reach the condition found in the Moluccan race *leucomelana*, in which forehead and sides of head are black, without any white superciliary line. The Celebes race *variabilis* was characterized by STRESEMANN (l.c.) as follows: "Compared with *leucomelana* it has the white superciliary stripe well developed, the sides of the head less blackened, and sometimes a narrow frontal stripe of white" (p. 369). Our two males from Wamingkoli, Buton, have the sides of the head wholly black with only a few white feathers on lores, cheeks and ear-coverts. These birds are thus extremely close to *leucomelana*. The other specimens have white superciliary stripes and the ear-coverts mottled black and white; some have a very narrow white frontal line. These colour types are still far from being *javanica*, which has a broad white forehead and no black whatever on the sides of the head. The Buton specimens have the first primary long, as in *leucomelana* (about the size of the 7th and 8th primary), not short, as in *javanica* (see: SIEBERS, l.c., and STRESEMANN, l.c.). As nothing is known about the zoogeographical origin of the Celebes populations, which may as well have arisen by hybridization of an eastern and a western population strain, it does not seem advisable at the moment to designate the Buton population under a particular subspecific name.

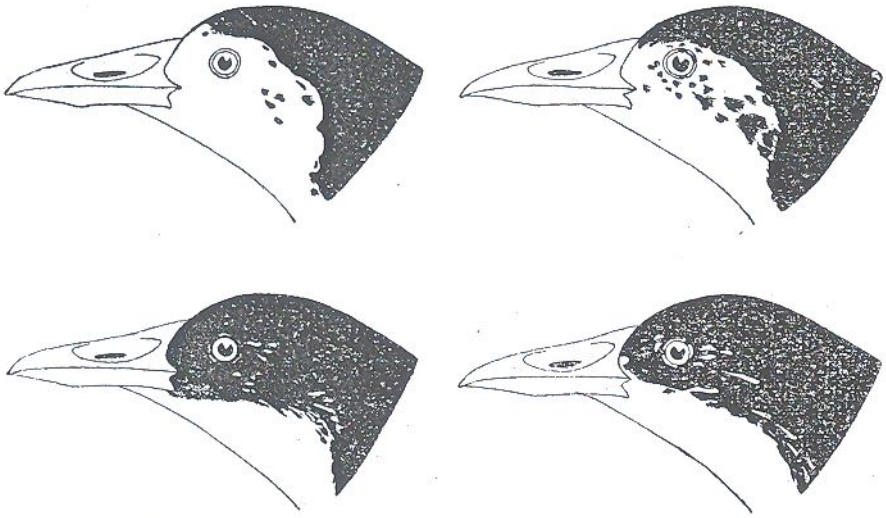

Fig. 1. *Amaurornis phoenicura variabilis*. — The extreme of the individual variation in the island of Buton (Napa or Wamingkoli River).

Distribution. — A widely spread Indo-Malayan species. Variable populations, known under the name *variabilis*, are known to inhabit the islands of Celebes and Buton. The species is unknown at present from Muna.

Vernacular name. — Totokeo (Buton). (See also: *Rallus torquatus*).

Field notes. — This rail was not rare in the dense vegetation of reeds and grasses along small rivers, as also in the impenetrable *Nipa* palm growths near the coast. In early mornings and late evenings they could be observed feeding in the water along the bank vegetation. (H.) (V)

Stiltia isabella (VIEILLOT)

Glareola isabella VIEILLOT, 1816, Analyse, p. 69.—Australia.

First record. — Buton, DE HAAN 1948.

Material. — Buton, Bau-bau, 2 ♂, 1 ♀, 28.ix.1948 (H.).

Measurements. — Buton, 1 ♂, wing 206, 212; tail 59, 61; bill from skull 19, 21; tarsus 44, 45; 1♀, wing 192; tail 56.5; bill 20.5; tarsus 44.5.

Weight. — 1 ♂, 51, 67 (last bird was extremely fat!); 1 ♀, 62 gr (H.).

Gonads. — Testes of 2 ♂, 2 × 3, 3 × 6 mm. Largest egg-follicle of 1 ♀, 1 mm (H.).

Colours. — Iris dark brown; bill coral red with black tip; legs blackish brown.

Distribution. — A breeding bird from Australia, which visits the E. Indonesian islands during the Australian winter. Its occurrence in Celebes is considered to be rather irregular (STRESEMANN, 1941). All specimens collected were very fat, indicating their migration disposition.

Vernacular name. — Kèra (Buton). (See also: *Charadrius asiaticus veredus*).

Field notes. — Only few specimens observed on the marshy places of the soccer field of Bau-bau, where the birds were feeding on a large species of gadfly, which they caught by rapid shearing flights. In the short grass of the field these birds were very conspicuous by their long legs (H.). (V)

Pluvialis dominica fulva (GMELIN)

Charadrius fulvus GMELIN, 1788, Syst. Nat. 1 (2), p. 687.—Tahiti.

Charadrius dominicus fulvus, HARTERT, 1903, Nov. Zool. 10, p. 37.—Buton.

First record. — Muna, DE HAAN 1948; Buton, KÜHN 1901.

Material. — Muna, Labasa, ♂, (♀), 1-2.x.1948 (H.). Buton, Wamingkoli River, ♀, 29.ix.1948 (H.); Buton, Bau-bau, ♂, ♀, 15.x.1948 (H.).

Measurements. — ♂, wing 165, 165.5; bill from skull 25, 27; tarsus 43, 43.5; ♀, wing 169, 172.5, 172.5; bill 27, 28, 28; tarsus 42, 42.5, 43.5.

Weight. — 2 ♂, 77, 102; 2 ♀, 102, 127 gr (H.).

Gonads. — Testes of 2 ♂, 1 × 2 mm. Largest egg-follicle of 2 ♀, 1, 1 mm (H.).

Colours. — Iris blackish brown; bill black; legs dark grey (H.).

Distribution. — A breeding bird from N. Asia, wintering in great numbers in the Indo-Australian Archipelago. The species was collected by KÜHN on Buton (xi.1901), and by R. C. ANDREWS on 16.xii.1909 on Makassar Island, Buton Strait (MAYR, in litt.).

Vernacular name. — Tjim-tjim-lali (Muna, Buton).

Field notes. — These birds occurred in flocks of hundreds of individuals along the coast, preferring mud-flats near mangrove vegetation. Also seen in few numbers along small inland pools near Labasa (Muna) (H.). (V)

Charadrius dubius curonicus GMELIN

Charadrius curonicus GMELIN, 1789, Syst. Nat. 1. pt. 2, p. 692.—Kurland, Baltic States.

First record. — Buton, DE HAAN 1948.

Material. — Buton, Bau-bau, ♀, 27.ix.1948 (H.).

Measurements. — ♀, wing 116, bill from skull 14, bill from frontal feathering 16.5, tarsus 23.

Weight. — ♀, 33 gr (H.).

Gonads. — Largest egg-follicle 2 mm (H.).

Colours. — Iris blackish brown; bill black; legs yellow (H.).

Discussion. — The specimen is in an intermediate state of moult between summer and winter plumage. Two outermost primaries and innermost secondaries ("tertials") are old and much worn. Bill thin and feeble.

Distribution. — A breeding bird from temperate Eurasia. Breeding area and winter range of this and the other subspecies (*jerdoni* and *dubius*), especially in S. E. Asia, are insufficiently known, but the race *curonicus* has been recorded from a few localities in Celebes (STRESEMANN. 1941). It is unknown from Muna.

Vernacular name. — Kindu-kindu-rampé (Buton).

Field notes. — The bird was collected on the soccer field near Bau-bau. It seemed to be rather common along the coast and in marshy and muddy places (H.). (V)

Charadrius leschenaultii leschenaultii LESSON

Charadrius leschenaultii LESSON, 1826, Dict. Sci. Nat. 42, p. 36.—Pondichéry, India.

Charadrius leschenaultii, SIEBERS, 1930, Treubia 7, Suppl., p. 206.—Muna.

First record. — Muna, ELBERT 1909.

Material. — Muna, 1 ♂, 1 ♀, sex inc., vii-viii.1909 (E.).

Measurements. — 1 ♂, wing 140; bill from skull 28; tarsus 37.5; 1 ♀, wing 139; bill 28.5; tarsus 39; sex inc., wing 147; bill 29; tarsus 37.5.

Distribution. — A breeding bird from C. Asia, wintering in great numbers in S. and S. E. Asia and N. W. Australia. Not known from Buton. (V)

Charadrius asiaticus veredus GOULD

Charadrius veredus GOULD, 1848, Proc. Zool. Soc. London, p. 38.—N. Australia.

First record. — Buton, DE HAAN 1948.

Material. — Buton, Bau-bau, 1 ♀, 19.x.1948 (H.).

Measurements. — ♀, wing 167, bill from skull 29, tarsus 47.5.

Weight. — ♀, 79 gr (H.).

Gonads. — Largest egg-follicle 0.5 mm (H.).

Colours. — Iris blackish brown; bill black; feet dirty yellow (H.).

Distribution. — A breeding bird from N. Mongolia, mainly wintering along Australian coasts. An uncommon visitor to the Indonesian Islands. Not known from Muna.

Vernacular name. — Kèra-kèra (Buton). (See also: *Stiltia isabella*).

Field notes. — Collected on the soccer field near Bau-bau (H.). (V)

Actitis hypoleucos (LINNAEUS)

Tringa hypoleucos LINNAEUS, 1758, Syst. Nat. X, p. 149.—Sweden.

Tringoides hypoleucos, HARTERT, 1903, Nov. Zool. 10, j. 37.—Buton.

First record. — Buton, KÜHN 1901.

Material. — 2 ♂, 1 ♀, 1 sex inc., viii.1909 (E.); Buton, Bau-bau, 1 ♀, 1 sex inc., 28-29.ix.1948 (H.).

Measurements. — 2 ♂, wing 111, 111; bill from skull 29, 31; tarsus 25.5, 26; 2 ♀, wing 107, 107; bill 29, 29.5; tarsus 24, 25.

Weight. — 1 ♀, 48; sex inc., 43 gr (H.).

Gonads. — Largest egg-follicle of 1 ♀, 1 mm (H.).

Distribution. — A breeding bird throughout the greater part of the palearctic region and an abundant winter visitor to the Indo-Australian Archipelago. KÜHN collected two specimens on Buton (xi.1901); R. C. ANDREWS got a specimen on 14.xii.1909 on Tobea Island, Buton Strait (MAYR, in litt.). Not yet collected on Muna, but probably observed there by DE HAAN.

Vernacular name. — Kindu-kindu-boné (Buton). (See also: *Tringa glareola*).

Field notes. — A common bird of coastal mud-flats and in all kinds of inland marshy places and river banks (H.). (V)

Tringa nebularia (GUNNERUS)

Scolopax nebularia GUNNERUS, 1767, in LEEM: Beskr. Finm. Lapper, p. 251.—Trodhjem, Norway.

First record. — Buton, ELBERT 1909.

Material. — Buton, 1 ♂, 2 ♀, viii.1909 (E.).

Measurements. — 1 ♂, wing 193; tarsus 59; 2 ♀, wing 191, 192; bill from skull 57, 60; tarsus 60.5, 60.5.

Distribution. — A breeding bird from the whole of northern Europe and Asia and a common winter visitor in S. E. Asia and Australia. It is unknown from Muna. (V)

Tringa glareola LINNAEUS

Tringa Glareola LINNAEUS, 1758, Syst. Nat. 10, 1, p. 149.—Sweden.

First record. — Buton, DE HAAN 1948.

Material. — Buton, Bau-bau, 1 ♂, 25.ix.1948; 1 ♂, 13.x.1948 (H.).

Measurements. — 2 ♂, wing 120, 121; bill from skull 32, 32.5; tarsus 34.5, 39.5.

Weight. — 2 ♂, 41, 54 gr (H.).

Gonads. — Testes of 2 ♂, 1 × 1, 1 × 1 mm (H.).

Colours. — Iris dark brown; bill black; legs olive green (H.).

Distribution. — A breeding bird from northern Eurasia and a common winter visitor throughout the whole of the Indo-Australian region. Not yet known from Muna.

Vernacular name. — Kindu-kindu-bone (Buton). (See also: *Actitis hypoleucos*).

Field notes. — Not uncommon along the sea coast and on inland pools and marshy localities (H.). (V)

Numenius phaeopus variegatus (SCOPOLI)

Tantalus variegatus SCOPOLI, 1786, Del. Flor. Faun. Insubr. 2, p. 92.—Luzon.

Numenius phaeopus variegatus, HARTERT, 1903, Nov. Zool. 10, p. 38.—Buton.

First record. — Buton, KÜHN 1901.

Material. — Buton, 1 ♂, viii.1909 (E.); Buton, Bau-bau, 1 ♀, 27.ix. 1948 (H.).

Measurements. — 1 ♂, wing 237; exposed culmen 79; tarsus 58; 1 ♀, wing 228+; exposed culmen 81; tarsus 60.5.

Weight. — ♀, 387 gr (H.).

Gonads. — Largest egg-follicle, 1 mm (H.).

Colours. — Iris dark brown; bill flesh colour with black tip; feet grey (H.).

Discussion. — Most of the plumage of the female from 27.ix has been renewed by summer moult, but the outermost primaries and a number of upper wing-coverts are old and strongly abraded, sharply contrasting with the new feathers. It probably is an aestivating bird.

Distribution. — The species as a whole breeds throughout the whole of northern Eurasia and America; the race *variegatus* is restricted to the North of E. Asia and is a well-known winter visitor in all parts of the Indo-Australian region. There are no specimens available from Muna, where, however, DE HAAN found it very numerous (x.1948). KÜHN collected one male on Buton (xi.1901) and R. C. ANDREWS got a male on Makassar Island, Buton Strait, on 16.xii.1909 (MAYR, in litt.).

Vernacular name. — Kololi (Buton).

Field notes. — Common along the coasts and at the mouths of small rivers and at low tide on dry coral reefs, often occurring in small flocks together with a larger species of Curlew (H.). (V)

Turacoena manadensis elberti RENSCH

Turacoena manadensis elberti RENSCH, 1926, Orn. Mon. Ber. 34, p. 175.—Bau-bau, Buton.

Turacoena manadensis, HARTERT, 1903, Nov. Zool. 10, p. 35.—Buton.

Turacoena manadensis manadensis, STRESEMANN, 1941, J.f.O. 89, p. 44.—Buton.

First record. — Muna, ELBERT 1909; Buton, KÜHN 1901.

Material. — Muna, 1 ♀, vii-viii.1909 (E.); Muna, Labasa, 1 ♂, 1 ♀, 1.x.1948 (H.). Buton, 4 ♂, 1 ♀, viii.1909 (E.); Buton, Wamingkoli, 1 sex inc., 29.ix.1948 (H.); Buton, Napa River, 1 ♂, 1 ♀ imm., 16.x.1948 (H.).

Measurements. — Muna, 1 ♂, wing 199; tail 196; 2 ♀, wing 196.5, 199; tail 190, 194. Buton, 5 ♂, wing 192, 196.5, 196.5, 197, 200.5; tail 189, 189, 190, 193, 195; 1 ♀, wing 197.5; tail 191; sex inc., wing 192.

Weight. — 2 ♂, 229, 253; 1 ♀, 234; sex inc., 243; 1 ♀ imm., 172 gr (H.).

Gonads. — Testes of 2 ♂, 2 × 3, 4 × 10 mm. Largest egg-follicle of 1 ♀ ad., 1 ♀ imm., 0.5 mm (H.). One of the males seems to be in breeding condition.

Colours. — Iris, eye-lid, and naked skin encircling eye, purplish red; bill and legs black. In the immature bird the iris is dark brown and the eye-lid and naked skin around the eye are black (H.).

Discussion. — No differences in colouration could be found after a comparison with 10 birds from N. Celebes. RENSCH (l.c.) described the Buton birds from the ELBERT collection in the "Natur Museum Senckenberg", Frankfurt, on account of the following differences in dimensions:

manadensis — wing ♂♀ 195 - 205
elberti — wing ♂♀ 188 - 197
sulaënsis — wing ♂♀ 180 - 185

Personal examination resulted in the following measurements:
manadensis (N. Celebes)- wing of 10 ♂♀ 196-207.5, average 202.0
elberti (Muna, Buton) — wing of 10 ♂♀ 192-200.5, average 196.7

Although the differences do not seem to indicate more than an average size variation, probably according to a North-South cline, I feel no real argument against maintaining this poorly characterized Muna and Buton race, now it has a name.

Distribution. — An endemic species to the Celebesian region, inhabiting Celebes, Togian Islands, Peling, Sula Islands, Muna, Buton. Local small differences in size have led to the recognition of the race *elberti* from Muna and Buton.

Vernacular name. — Takuo (Muna), Putéba (Buton).

Field notes. — Only occurring in forests and therefore scarce in Buton, where the country was arid and heavily deforestated. In Muna usually seen in *Tectona* forests, in company with *Macropygia amboinensis* with which it agreed in habits and with which it seemed to share the same food, viz., the juicy fruits of the Tembelèkan (*Lantana camara*) and those of other forest plants. The call of this Dove was reminiscent of that of the European Cuckoo and was often heard early in the morning and late in the evening. On Buton every evening small flocks of these birds went to the narrow River Napa to drink. All specimens collected were heavily infested with *Cestodes*, which were never found in *Macropygia amboinensis* (H.). (V)

Macropygia amboinensis albicapilla BONAPARTE

Macropygia albicapilla BONAPARTE, 1854, Compt. Rend. Ac. Sc. Paris 39, p. 111.—N. Celebes.

Macropygia amboinensis albicapilla, SIEBERS, 1930, Treubia 7, suppl., p. 189-190.—Buton.

Macropygia amboinensis albicapilla, STRESEMANN, 1941, J.f.O. 89, p. 44.—Buton.

First record. — Muna, DE HAAN 1948; Buton, ELBERT 1909.

Material. — Muna, Labasa, 2 ♂, 7-9.x.1948 (H.). Buton, 1 ♂, 2 ♀, viii. 1909 (E.).

Measurements. — Muna, 2 ♂, wing 156, 157.5; tail 174, 185+. Buton, 1 ♂, wing 167; tail 212; 2 ♀, wing 154, 154.5; tail 186, 190.

Weight. — 2 ♂, 101, 118 gr (H.).

Gonads. — Testes of 2 ♂, 6 × 12, 5 × 9 mm (H.). These birds seem to be in breeding condition.

Colours. — Iris, inner circle bluish grey; outer circle reddish; eye-lid grey; bill black; legs red (H.).

Distribution. — Celebes, Muna, Buton, Tukang Besi Islands. Other races occur in the Togian Islands, Moluccas, and in the Papuasian Islands.

Vernacular name. — Limorampé (Muna).

Field notes. — In the island of Muna this species was common in Djati (*Tectona*) forests. In Buton it was frequently seen in the bushes growing in ravines and river-valleys (H.). (V)

Chalcophaps indica indica (LINNAEUS)

Columba indica LINNAEUS, 1758, Syst. Nat. 10, 1, p. 164.—East Indies.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, 1 ♂, vii-viii.1909 (E.). Buton, 1 ♂, viii.1909 (E.); Buton, Bau-bau, 1 ♂, 27.ix.1948; 1 ♂, 16.x.1948; 1 ♀, 28.ix.1948; Buton, Napa River, 1 ♂, 20.x.1948 (H.).

Measurements. — Muna, 1 ♂, wing 143. Buton, 3 ♂, wing 140, 142, 145; 1 ♀, wing 141.5.

Weight. — 3 ♂, 89, 106, 113; 1 ♀, 88 gr (H.).

Gonads. — Testes of 1 ♂, 6 × 10 mm. Largest egg-follicle of 1 ♀, 3 mm; oviduct strongly swollen and lobbed (H.). The birds are apparently in breeding condition.

Colours. — Iris blackish brown, eye-lid violet brown; bill red, base violet; legs violet (H.).

Distribution. — The race *indica* of this widely spread Indo-Australian species inhabits a very large area in S. E. Asia. It is known to occur on Celebes, Muna, Buton, Tukang Besi and Sula Islands.

Vernacular name. — Limo (Buton).

Field notes. — This was a rather common ground-feeding Dove in Buton and occurred everywhere where trees and bushes were growing. Flight was rapid and rather low (H.). (V)

Treron pompadora dehaani VOOUS, subspec. nov.

Treron pompadora griseicauda, STRESEMANN, 1941, J.f.O. 89, p. 51.—Muna.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Diagnosis. — See below.

Type of subspecies. — 1 ♂, Buton, viii.1909. ELBERT coll. In collection Zoological Museum Amsterdam nr. 8703. Cotype. — 1 ♀, Buton, viii.1909. ELBERT coll. in collection Zoological Museum Amsterdam nr. 8704.

Material. — Muna, 1 ♂, 3 ♀, vii-viii.1909 (E.); Muna, Labasa, 1 ♂, 1 ♀, 3.x.1948 (H.). Buton, 1 ♂, 1 ♀, viii.1909 (E.); Buton, Bau-bau, 2 ♂,

1 ♀, 20-24.ix.1948 (H.). This material includes two specimens (E.) from the "Natur Museum Senckenberg", Frankfurt, Germany.

Measurements. — Muna, 2 ♂, wing 150.5, 150.5; 4 ♀, wing 141, 145, 147.5, 148. Buton, 3 ♂, wing 150.5, 151, 155; 2 ♀, wing 148, 153.5.

Weight. — 3 ♂, 172, 174, 191; 1 ♀, 183 gr (H.).

Gonads. — Testes of 2 ♂, 11 × 5, 10 × 6 mm. Largest egg-follicle of 2 ♀, 3, 4 mm (H.). The birds seem to be in breeding condition.

Colours. — Iris yellow and brownish; bill and cere greenish yellow; legs purplish red (H.).

Discussion. — The Muna and Buton specimens proved to be different in colouration from many Celebes birds in the museums at Amsterdam, Leiden and in the collection VAN MARLE-COOMANS DE RUITER, originating from various parts of Celebes, including 2 males from Lalolei, S. E. Celebes (Berlin Museum). Both sexes have the crowns lighter grey and more strongly suffused with yellowish green and have the under parts of a different greenish yellow tinge, which is lighter than in Celebes specimens and appears to be more yellowish, especially on throat and breast. In Muna and Buton males the upper parts seem to be of a deeper maroon and the wing bend is more maroon, less grey. In the females the upper parts are a darker yellowish green and perceptibly less suffused with apple green. The general colouration was not much different from that of two birds from Kangean Island (types of *T. p. vordermani* FINSCH) compared in the Leiden Museum. Measurements apparently the same as in N. Celebes.

Distribution. — Muna and Buton. A totally new arrangement of the races of this widely spread Indo-Malayan species was proposed by MAYR (Bull. Am. Mus. Nat. Hist. 83, p. 146-147), who does not decide upon the question whether the races of a *pompadora* group should be specifically opposed to the races of a *curvirostra* group. The *griseicauda* group, to which the Muna and Buton race belongs, inhabit the Sunda Islands, Celebes and satellite islands in various closely resembling races.

Vernacular name. — Futègo (Muna), Putéa idju (Buton).

Field notes. — A common bird in Muna and Buton in all places where fruit-bearing trees offered a good dinner. They were found in the waringin-trees (*Ficus*) of native villages as well as in the forests. Often in company with *Ptilinopus melanospilus*. They were not at all shy and easily taken (H.). (V)

Ptilinopus melanospila aurescentior HARTERT.

Ptilinopus melanocephala aurescentior HARTERT, 1903, Nov. Zool. 10, p. 33.— Tukang Besi Islands. Also on Buton.

Ptilinopus melonocephalus melanospilus, STRESEMANN, 1941, J.f.O. 89, p. 52.—Buton.

First record. — Muna, ELBERT 1909; Buton, KÜHN 1901.

Material. — Muna, 1 ♀, vii-viii.1909 (E.); Muna, Labasa, 2 ♂, 1 ♀, 5-7.x.1948 (H.). Buton, 2 ♂, 3 ♀, viii.1909 (E.); Buton, Bau-bau, 2 ♂, 3 ♀, 21-29.ix.1948. 2 ♂, 1 ♀, 15-18.x.1948 (H.).

Measurements — Muna, 1 ♂, wing 113.5; 2 ♀, wing 112, 114. Buton, 6 ♂, wing 114, 114.5, 115.5, 115.5, 116, 120; 7♀ wing 110.5, 111, 111, 112, 113, 113, 117.5.

Weight. — 6 ♂, 91, 93, 95, 107, 109, 119; 5 ♀, 84, 86, 86, 96, 106 gr (H.).

Gonads. — Testes of 4 ♂, 2 × 4, 4 × 10, 6 × 11, 8 mm. Largest egg-follicle of 5 ♀, 2, 3, 3, 3,5 mm. In the ♀ from 21.ix the oviduct is swollen and twisted, indicating egg-laying activity (H.). Some of the specimens are in breeding condition.

Colours. — Iris and eye-lid had various shades of yellow; bill light greenish yellow in males, blackish grey in females; cere light greenish yellow in males and females; legs purplish red (H.).

Discussion. — Muna and Buton birds differed slightly from a rather large series from N. Celebes, which is the type locality of the race *melanospila*. The upper parts are slightly washed with golden yellow, especially in the males. This golden wash is also present on the under parts of the males, but is absent on those of the females. Throat pale yellow, agreeing with Javanese birds, but differing from the orange-yellow colouration present in the series from N. Celebes. All these differences were rather clear when seen in the series, but a slight amount of overlap was noticeable. As a whole the Muna and Buton birds agreed perfectly with HARTERT's description of specimens from the Tukang Besi Islands, in which he also included specimens from Buton collected by KÜHN. Thus, although not having seen any topotypical bird from the Tukang Besi Islands, I do not hesitate referring the Muna and Buton specimens before me to the Tukang Besi race *aurescentior*. HARTERT (l.c.) had apparently some reason to wonder whether this race might also inhabit S. E. Celebes.

Distribution. — According to STRESEMANN this must have been originally a Celebesian species, which at present has radiated into several directions: Philippines and Palawan; Sula and Ceram; Tukang Besi Islands, Lesser Sunda Islands and Java. The race *melanospila* inhabits Celebes and Togian Islands; *aurescentior* lives in the Tukang Besi Islands, Buton, Muna.

Vernacular name. — Puné (Muna, Buton).

Field notes. — This was a common bird where fruit bearing trees (*Ficus*) were present; it occurred in native villages as well as in the forest and was not at all shy. It was mostly seen in company with *Treron pompadora* (H.). (V)

Ducula aenea pallidinucha MAYR

Ducula aenea pallidinucha MAYR, 1944, Bull. Am. Mus. Nat. Hist. 83, p. 148.—Tobea Island, Buton Strait.

Ducula paulina paulina, STRESEMANN, 1941, J.f.O. 89, p. 56.—Muna.

Ducula aenea pallidinucha, HOOGERWERF, 1950, Zool. Meded. 30, p. 285.—Muna, Buton.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, 6 ♂, 4 ♀, vii-viii.1909 (E.); Muna, Labasa, 5 ♂, 4♀, 1 sex inc., 2-5.x.1948 (H.). Buton, 2 ♂, 2 ♀, viii.1909 (E.). The material includes 5 specimens from the "Natur Museum Senckenberg", Frankfurt, Germany.

Measurements. — Muna, ♂, wing 232, 234, 238, 238, 239, 240, 242, 243, 247, average 239.2; tail 140, 141, 141, 142, 143, 144, 144, 147, average 142.8; 5 ♀, wing 226, 229, 231, 231, 234, average 230.2; tail 133, 135, 137, 138, 141, average 136.8. Buton, 2 ♂, wing 233, 244, average 238.5; tail 137, 140, average 138.6; 2 ♀, wing 235, 245, average 240.0; tail 141, 142, average 141.5.

Weight. — 4 ♂, 402, 456, 456, 490; 5 ♀, 416, 416, 439, 454, 510 gr (H.).

Gonads. — Testes of 5 ♂, 6 × 11, 9 × 15, 9 × 15, 9 × 17, 10 × 17 mm. Largest egg-follicle of 4 ♀, 3, 3, 4, 6 mm (H.). Most of the specimens are in breeding condition.

Colours. — Iris red or reddish brown; bill grey, cere violet; legs violet (H.).

Discussion. — A comparison of series containing 24 specimens from Muna and Buton with the same number from N. Celebes brought out exactly the same differences noticed by MAYR (l.c.) and subsequently by HOOGERWERF (l.c.).

Distribution. — The species inhabits a large part of the Indo-Australian Archipelago; the race *pallidinucha* occurs in S. E. Celebes and in the islands of Muna, Buton, and Tobea. In the latter locality it was collected by R. C. ANDREWS. In other parts of Celebes the species is represented by the race *paulina* in the North and by racially problematical populations in the South.

Vernacular name. — Ngawu (Muna).

Field notes. — Very common in the woods near Labasa (Muna), where it prefered forest edges and parts of mixed forest above the monotonous

Tectona plantations. They assembled in large numbers in fruit bearing fig-trees and it was not difficult to shoot them under such conditions. Its call-note was one of the most characteristic voices heard in the woods of Muna; it sounded like a rapidly repeating "brrupe-brrupe-brrupe" (H.). (V)

Ducula luctuosa (TEMMINCK)

Columba luctuosa TEMMINCK, 1825, Planch. Col. 42, p. 247.—N. Celebes.
Melanura luctuosa, SIEBERS, 1930, Treubia 7, suppl., p. 184-185.—Muna, Buton.
Ducula luctuosa, STRESEMANN, 1941, J.f.O. 89, p. 56.—Muna, Buton.

First record. — Muna, ELBERT 1909; Buton, ELBERT 1909.

Material. — Muna, 2 ♂, 1 ♀, vii-viii.1909 (E.); Muna, Labasa, 1 ♂, 6.x. 1948 (H.). Buton, Bau-bau, 4 ♂, 3 ♀, 19-28.ix.1948 (H.).

Measurements. — Muna, 3 ♂, wing 236, 238, 240; 1 ♀, wing 242. Buton, 9 ♂, wing 242, 242, 243, 243, 245, 246, 247, 250; 5 ♀, wing 228, 234, 236, 241, 243.

Gonads. — Testes of 4 ♂, 6 × 14, 7 × 14, 11 × 19, 9 × 18 mm. Largest egg-follicle of 2 ♀ ad., 3, 11 mm. The female from 19.ix had the oviduct swollen and twisted. In a female from 20.ix, which is thought to be in its first year (conspicuous abrasion of the plumage), the follicles in the ovary were extremely minute (H.). Most of the birds appear to be in breeding condition.

Colours. — Iris black; bill and cere bluish grey; legs bluish grey (H.).

Discussion. — The black patch on the outer web of the tail feathers is narrow; the black patch on the inner web is very small or absent. See also SIEBERS l.c.

Distribution. — An endemic species to the Celebes region. Close relatives occur throughout the whole Indo-Australian region. Exact range: Celebes, Peling, Banggai, Sula, Muna, Buton, and Labuan Blanda Island in Buton Strait (R. C. ANDREWS coll.; MAYR, in litt.).

Vernacular name. — Putého (Muna), Putea (Buton).

Field notes. — Common along the coast of Muna and Buton. In the morning and in the evening they were found resting in large numbers in the trees of Bau-bau, where they were attracted by fruit bearing fig trees (H.). (V)

Streptopelia chinensis tigrina (TEMMINCK)

Columba tigrina TEMMINCK, 1811, Pigeons 1, pl. XLIII, p. 94.—Java.
Turtur tigrina, HARTERT, 1903, Nov. Zool. 10, p. 35.—Buton.

First record. — Buton, KÜHN 1901.

Material. — Buton, Bau-bau, 1 ♂, 2 ♀, 23-28.ix.1948 (H.).

Measurements. — Buton, 1 ♂, wing 141; 2 ♀, wing 142, 143.

Weight. — 1 ♂, 104; 2 ♀, 127, 128 gr (H.).

Gonads. — Testes 2 × 5 mm. Largest egg-follicle of 2 ♀, 2, 3 mm (H.).

Colours. — Iris creamy; bill black; legs red (H.).

Discussion. — The measurements of the 3 Buton birds (average of wing 142.0) agree with those from N. Celebes in the Amsterdam Museum (wing of 10 specimens 138-148, average 144.0).

Distribution. — A common bird in continental S. E. Asia and in Malaysia. Introduced into Celebes and several other islands in E. Indonesia and now apparently spread over the whole island of Celebes, including Buton. It was also observed by DE HAAN on Muna, but he did not succeed collecting it on this island.

Vernacular name. — Bokuru (Buton).

Field notes. — A common bird in the cultivated areas and in native villages of Muna and Buton (H.). (V)

Turnix sylvatica (DESFONTAINES)

Tetrao sylvaticus DESFONTAINES, 1787, Mém. Ac. Roy. Soc. Paris, p. 500.—N. Algeria.

First record. — Muna, DE HAAN 1948.

Material. — Muna, Labasa, 2 ♂ ad., 2 ♀ ad., 1 imm. sex inc., 1-6.x. 1948 (H.).

Measurements. — Muna, 2 ♂, wing 69, 75.5; bill from base 13, 14.5; tarsus 17.5, 19.5; middle toe and claw 14, 15; 2 ♀, wing 73.5, 79; bill 15, 15; tarsus 19.5, 21; middle toe 15, 15.5.

Weight. — 1 ♂, ad., 28; 2 ♀ ad., 32, 38; imm. sex inc., 23 gr (H.).

Gonads. — Testes of 1 ♂ ad., 6 × 10 mm. Largest egg-follicle of 2 ♀ ad., 2, 1 mm (H.). The male seems to be in breeding condition.

Colours. — Iris white; bill and legs yellowish brown, or dirty yellow (H.).

Discussion. — The specimens agree with the description of *Turnix beccarii* SALVADORI, 1875 (Ann. Mus. Civ. Genova 7, p. 675) from Kendari, S. E. Celebes, but seems to be larger. Shape of bill as in *T. suscicator bartelsorum* from Java. As a revision of Indonesian representatives of *Turnix* is under preparation by Dr E. SUTTER (Basel, Switzerland) and as the above mentioned specimens are to be included in Dr SUTTER's study, I do not risk naming our specimens. However, I am of the opinion that

beccarii, as also the Muna specimens, are representatives of *Turnix sylvatica*. The following is only a small tabulation of wing measurements:

Muna (see above) — ♂, 69, 75.5; ♀, 73.5, 79.

Lalolei, S. E. Celebes (STRESEMANN, 1941) — ♂, 65, 67, 70; ♀, 71.

Kendari, S. E. Celebes (SALVADORI, l.c.) — 64, 70.

Distribution. — The species group *Turnix sylvatica-maculosa* inhabits a wide area, from the Mediterranean region through N. Africa, through the Philippines to Celebes, Java and Lesser Sunda Islands, and Australia. In the Celebes region it is known from C. and S. E. Celebes, Peling, Muna, and Tukang Besi Islands, but it has never been found on Buton.

Vernacular name. — Sonta (Muna).

Field notes. — Common in the grass along forest edges and in low scrub in savannah. Also found in the "alang-alang" fields, where schoolboys succeeded in catching them alive by chasing them uninterruptedly for some time (H.). (V)

Coturnix chinensis lineata (SCOPOLI)

Oriolus lineatus SCOPOLI, 1786, Del. Florae et Faunae Insubr. 2, p. 87.—Luzon, Philippines.

First record. — Muna, DE HAAN 1948.

Material. — Muna, Labasa, 3 ♂, 2 ♀, 1-9.x.1948 (H.).

Measurements. — 3 ♂, wing 65, 63.5, 62.5; tail 28, 26, 26; culmen 9.4, 9.2, 9.2; 2 ♀, wing 66, 63.5; tail 28, 25; culmen 9.6; 8.9.

Weight. — 3 ♂, 34, 31, 31 gr; 2 ♀ 31, 44 gr. (H.)

Gonads. — Testes of 3 ♂, 3 × 4, 2 × 3, 2 × 3 mm; largest egg-follicle, of 2 ♀, 1 mm (2 ×). (H.)

Colours. — Iris reddish brown (♂) or brown (1 ♂, 2 ♀); bill black, grey or slate-grey; feet brownish yellow or dirty yellow. (H)

Discussion. — According to STRESEMANN there is no difference between birds from Celebes and topotypical *lineata*, so the race *minima* GOULD (1859) should be united with *lineata* SCOPOLI. The genus *Excalfactoria* should be united with *Coturnix* (DELACOUR & MAYR, Zoölogica 1945, 30, p. 106).

Distribution. — The subspecies *lineata* occurs in the Philippines, Celebes and Muna.

The race *lineata* has often been recorded from Borneo, but I think this record is open to doubt. In our collection are some specimens from Borneo which should in my opinion be considered as *Coturnix chinensis palmeri* (RILEY). These specimens are:

1) 1 ♀, Djembajan, Kutai, E. Borneo, P. J. BOUMA coll.
2) 1 ♂, Lawas Riv., Brunei, leg. DUMAS 1900. This specimen has been recorded by C. BODEN KLOSS (Treubia 1930, 12, p. 397) as *lineata*, but on the label KLOSS has written: *caerulescens* HACHISUKA (= *palmeri*!)
3) 1 ♂, Ngara, Pontianak, W. Borneo, COOMANS DE RUITER leg. This specimen has been recorded by CHASEN (Treubia 1932, 14, p. 12) as *lineata*.

One specimen in our collection obviously belonging to *lineata* is labelled "♀Borneo". This specimen has been recorded by BODEN KLOSS (l.c.) as *lineata*, but on the label KLOSS has written *caerulescens*. It must be doubted whether this specimen really came from Borneo.

In conclusion I think PETERS (Checklist Birds World 1934, 2, p. 96) is right in listing only the race *palmeri* for Borneo. The subspecies *lineatula* RENSCH (1931) from Lesser Sunda Is. in my opinion is a very weak race.

Vernacular name. — Sonta kasamba-kasamba or Sonta samba-samba (Muna).

Field notes. — All material has been collected in alang-alang fields or in savannah. (B)

Gallus gallus gallus (LINNAEUS)

Phasianus gallus LINNAEUS, 1758, Syst. Nat., ed. 10, I, p. 158.—India orientalis: Pouli candor etc. = Pulo Condore, off the mouths of the Mekong River, Coast Cochin China.

First record. — Buton, ELBERT 1909.

Material. — Buton, 1 ♂ semi-ad., viii.1909 (E.).

Measurements. — 1 ♂ semi-ad., wing 223; tail 181; culmen 30.0.

Discussion. — The only specimen recorded from Buton is a young animal with little developed comb and only half moulted neckfeathers. Nevertheless this specimen bears clearly the racial characters of *gallus* L. The tail has not yet passed the second moult, so the small measurements are not important in comparing this specimen with our large and beautiful series from Celebes.

Distribution. — Vide STRESEMANN (Ornith. Monatsber. 1928, 36, pp. 50-51, and J.f.O. 1939, 87, p. 414). (B)