

Proportion borne by the pelvic limb (femur, tibia, and pes) to the pectoral limb taken as 100.

Canis dingo	114·6	Mellivora	102·8
Procyon	123·1	Helictis	123·7
Nasua	128·8	Ictonyx	119·6
Cercoleptes	119·3	Galictis	116·4
Ailurus	112·7	Grisonia	117·9
Bassaris	119·0	Mustela	127·5
Bassaricyon	—	Putorius	118·3
Meles	116·8	Gulo	116·2
Arctonyx	110·1	Lutra	128·8
Taxidea	100·0	Aonyx	115·0
Mydaus	100·0	Enhydra	163·7
Mephitis	122·1	Ursus horribilis	112·8
Conepatus	122·3	Melursus	107·4

4. Report on the Collection of Birds made during the Voyage of the Yacht 'Marchesa.' Part II. Borneo and the Island of Cagayan Sulu. By F. H. H. GUILLEMARD, M.A., M.D., F.L.S., &c.

[Received April 9, 1885.]

(Plate XXV.)

Section I. BORNEO.

The cruise of the 'Marchesa' in Borneo was confined to the Sarawak district and the territory of the North Borneo Company. Certain islands to the northward were also visited, the most interesting of which was Cagayan Sulu, a solitary volcanic island in the Sulu Sea, from which no specimens have hitherto been brought. Examples of altogether one hundred and fourteen species were obtained from the mainland of Borneo. All these have, with one exception, been previously recorded from that country, and as the chief interest in the collection lies in the fact of some of the localities being new, a list only of the species is here given.

SPILORNIS PALLIDUS, Walden.

Spilornis bacha, Salvadori, Uccelli di Borneo, p. 7.

Silam, Darvel Bay, N.E. Borneo.

MICROHIERAX LATIFRONS, Sharpe.

Silam, Darvel Bay.

LORICULUS GALGULUS, Linn.

Loriculus galgulus, Salvad. *op. cit.* p. 26.

Three specimens from Silam.



J. Smit lith.

Hanhart imp.

MIXORNIS CAGAYANENSIS.



CHOTOREA CHRYSOPSIS, Goffin.

Chotorea chrysopsis, Salvad. *op. cit.* p. 32.

Two specimens, ♂ and ♀, from Silam.

CHOTOREA VERSICOLOR, Raffles.

Chotorea versicolor, Salvad. *op. cit.* p. 33.

♂, from Sarawak. Iris brown; bill and feet greenish-brown.

CHOTOREA MYSTACOPHANES, Temm.

Chotorea mystacophanus, Salvad. *op. cit.* p. 34.♂, and *juv.* ♂, from Sarawak.

♂, from Usukan Bay, N. Borneo.

4 ♂ adult, from Silam.

♀. Silam.

♂ *juv.* Silam.

XANTHOLÆMA DUVAUCELII, Lesson.

Xantholæma duvaucelii, Salvad. *op. cit.* p. 38.

♂, from Silam.

CALORHAMPHUS FULIGINOSUS, Temm.

Calorhamphus fuliginosus, Salvad. *op. cit.* p. 39.

Two specimens from Silam, Darvel Bay. In both the chin and throat are red, and there is only a slight yellowish margin on the lowest feathers of the throat. The beak in both instances is pinkish white, but unfortunately the sex is not indicated.

LYNGIPICUS AURITUS, Eyton.

Lyngipicus fusco-albidus, Salvad. *op. cit.* p. 42.

♂ and ♀. Kimanis River, N. Borneo.

XYLOLEPES VALIDUS, Reinw.

Xylolopes validus, Salvad. *op. cit.* p. 43.

Two specimens, from Sandakan and Silam, N. Borneo.

CALLOLOPHUS PUNICEUS, Horsf.

Callolophus puniceus, Salvad. *op. cit.* p. 49.

♂. Silam.

CALLOLOPHUS MENTALIS, Temm.

Callolophus mentalis, Salvad. *op. cit.* p. 49.

♂. Silam.

♂ *juv.* Sandakan.

TIGA JAVANENSIS, Ljungh.

Tiga javanensis, Salvad. *op. cit.* p. 54.

One specimen from Sarawak.

MEIGLYPTES TRISTIS, Horsf.

Meiglyptes tristis, Salvad. *op. cit.* p. 56.

♂ and ♀. Silam.

♂ and ♀. Sandakan.

MEIGLYPTES TUKKI, Lesson.

Meiglyptes tukki, Salvad. *op. cit.* p. 57.

♂. Kudat, W. Borneo.

2 ♂. Sandakan.

♀. Sandakan.

The iris of the Kudat bird is noted as dark brown.

SASIA ABNORMIS, Temm.

Sasia abnormis, Salvad. *op. cit.* p. 60.

♀. Silam.

COCCYSTES COROMANDUS, Linn.

Coccytes coromandus, Salvad. *op. cit.* p. 67.

Silam.

EUDYNAMIS MALAYANA, Cab. & Hein.

Eudynamis malayana, Salvad. *op. cit.* p. 68.

♂. Sandakan.

RHINORTHA CHLOROPHÆA, Raffles.

Rhynortha chlorophæa, Salvad. *op. cit.* p. 69.

Silam, two specimens.

Sandakan, one specimen.

♂. Sarawak.

In the Sandakan and Silam specimens the sex is not given. In the male from Sarawak the head is fulvous and the tail black.

RHOPODYTES SUMATRANUS, Raffles.

Rhopodytes sumatranus, Salvad. *op. cit.* p. 73.

Silam. Crissum greyish black.

RHAMPHOCOCCYX ERYTHROGNATHUS, Hartl.

Rhamphococcyx erythrognaethus, Salvad. *op. cit.* p. 74.

Two specimens from Sandakan.

Two specimens from Silam.

All have the median rectrices tipped with chestnut. In two of the skins, one from each locality, the chin is ash-coloured.

CENTROCOCCYX EURYCERCUS, Hay.

Centrococcyx eurycercus, Salvad. *op. cit.* p. 78.

♂. Sandakan.

HYDROCISSA ALBIROSTRIS, Shaw.

Hydrocissa albirostris, Salvad. *op. cit.* p. 82.

Silam, one specimen. The four external rectrices are entirely white.

MEROPS BICOLOR, Bodd.

Merops bicolor, Salvad. *op. cit.* p. 90.

♂. Kimanis River, N. Borneo.

♂. Abai, N. Borneo.

Silam, one specimen.

Iris dark brown.

NYCTIORNIS AMICTA, Temm.

Nyctiornis amicta, Salvad. *op. cit.* p. 91.

Two specimens from Silam.

♂. Sandakan.

ALCEDO BENGALENSIS, Gm.

Alcedo bengalensis, Salvad. *op. cit.* p. 92.

♂. Sigaliud River, Sandakan.

Silam, one specimen.

PELARGOPSIS LEUCOCEPHALA, Gm.

Pelargopsis leucocephala, Salvad. *op. cit.* p. 95.

♂. Sigaliud River, Sandakan.

Pale ochraceous; the upper surface bright bluish-green. No regular cap, but slightly marked with brown on the head. Bill from gape 8·8 centims., wing 14·1 centims. Iris ruddy brown; bill coral, dark at tip; tarsus brilliant coral-red.

CEYX DILLWYNI, Sharpe.

Ceyx dillwyni, Salvad. *op. cit.* p. 99.*Ceyx sharpei*, id. *ibid.* p. 98.

Silam, one specimen.

HALCYON COROMANDA, Lath.

Callialcyon coromanda, Salvad. *op. cit.* p. 101.

♂. Silam.

Juv. Silam.

The young bird has the entire upper surface chestnut, faintly washed with violet. Beneath, the feathers of the breast and abdomen are delicately tipped with black.

HALCYON CONCRETA, Temm.

Caridagrus concretus, Salvad. *op. cit.* p. 102.

Juv. Silam.

CALYPTOMENA VIRIDIS, Raffl.

Calyptomena viridis, Salvad. *op. cit.* p. 106.

2 ♂. Silam.

♂. Sandakan.

EURYLÆMUS JAVANICUS, Horsf.

Eurylæmus javanicus, Salvad. *op. cit.* p. 107.

♂. Silam.

2 ♀. Silam.

EURYLÆMUS OCHROMELAS, Raffl.

Eurylæmus ochromelas, Salvad. *op. cit.* p. 108.

♂. Silam.

♂ juv. Silam.

♀. Silam.

CYMBORHYNCHUS MACRORHYNCHUS, Gm.

Cymborhynchus macrorhynchus, Salvad. *op. cit.* p. 109.

♂. Sarawak.

2 ♀. Sarawak.

Sandakan, one specimen.

Silam, one specimen.

Appears very much more common on the Sarawak river than in any part of the N. Borneo district I have visited. Four out of the five individuals have more or less white on the inner webs of the outer rectrices.

CORYDON SUMATRANUS, Raffl.

Corydon sumatranus, Salvad. *op. cit.* p. 111.

♂. Sarawak River. Iris purple.

BATRACHOSTOMUS AURITUS, Vig.

Batrachostomus auritus, Tweed. P. Z. S. 1877, p. 439.

Silam, one specimen.

CAPRIMULGUS MACRURUS, Horsf.

Caprimulgus macrurus, Salvad. *op. cit.* p. 117.

♂. Kimanis River, N. Borneo.

COLLOCALIA LINCHII, Horsf. & Moore.

Collocalia linchii, Salvad. *op. cit.* p. 121.

Sandakan, one specimen.

MACROPTERYX COMATUS, Temm.

Dendrochelidon comata, Salvad. *op. cit.* p. 123.

♂. Sandakan.

♂. Sigaliud River, Sandakan.

♀. Sigaliud River.

Shot 13th April.

STOPORALA THALASSINOIDES, Cab.

Stoporala thalassinoides, Salvad. *op. cit.* p. 132.

Silam, one specimen.

HYPOTHYMIS OCCIPITALIS, Vig.

Hypothymis azurea, Salvad. *op. cit.* p. 133.

♂. Sigaliud River, Sandakan.

RHIPIDURA JAVANICA, Sparrm.

Leucocerca javanica, Salvad. *op. cit.* p. 135.

♀. Sigaliud River, Sandakan.

TERPSIPHONE AFFINIS, Hay.

Terpsiphone affinis, Salvad. *op. cit.* p. 137.

2 ♂. Silam.

♂. Sarawak.

Juv. Silam.

The three males are in full plumage. The young bird has the uropygium and tail-feathers bright chestnut. The two median rectrices are prolonged about an inch beyond the others, and still show the sheath at their base.

PHILENTOMA VELATUM, Temm.

Philentoma velatum, Salvad. *op. cit.* p. 139.

♂. Silam.

ARTAMUS LEUCORHYNCHUS, Linn.

Artamus leucorhynchus, Salvad. *op. cit.* p. 140.

Silam, one specimen.

PERICROCOTUS IGNEUS, Blyth.

Pericrocotus igneus, Salvad. *op. cit.* p. 144.

♂. Sarawak.

♂. Silam.

LALAGE TERAT, Bodd.

Lalage terat, Salvad. *op. cit.* p. 145.

♂. Abai, N. Borneo.

Juv. Sandakan.

LALAGE CULMINATA, Hay.

Volvocivora schierbrandii, Salvad. *op. cit.* p. 148.

♀. Silam.

IRENA CRINIGER, Sharpe.

Irena cyanea, Salvad. *op. cit.* p. 151.

2 ♂. Silam.

♂. Sandakan.

♀. Sigaliud River, Sandakan.

The Chinese use the feathers of this bird in Canton to make a sort of blue enamel in articles of jewellery.

CHAPTIA MALAYENSIS, Hay.

Chaptia malayensis, Salvad. *op. cit.* p. 153.

Sigaliud River, one specimen.

DISSEMURUS BRACHYPHORUS, Temm.

Dissemurus brachyphorus, Salvad. *op. cit.* p. 154.

♂. Banguay I., N. Borneo.

♀. Banguay I.

♀. Sarawak.

Silam, two specimens.

MYIOLESTES OBSCURUS, Horsf.*Myiolestes obscurus*, Salvad. *op. cit.* p. 156.

♂. Usukan Bay, N. Borneo.

♂. Benoni River, N. Borneo.

♀. Usukan Bay.

PACHYCEPHALA GRISEOLA, Blyth.*Hyloterpe griseola*, Salvad. *op. cit.* p. 157.

♂. Libarran I., N. Borneo.

SITTA FRONTALIS, Horsf.*Dendrophila frontalis*, Salvad. *op. cit.* p. 161.

♂. Silam.

♀. Silam.

DICÆUM TRIGONOSTIGMA, Scop.*Dicæum trigonostigma*, Salvad. *op. cit.* p. 166.

♂. Sigaliud River, Sandakan.

♂. Kudat.

♂. Silam.

? **ÆTHOPYGA SIPARAJA**, Raffl.*Æthopyga eupogon*, Salvad. *op. cit.* p. 173.♂. *juv.* Banguay I., N. Borneo.

This bird has the colouring of the female, except that the chin and throat are washed with red. Wing 5 centims., culmen 1·5 centims., tarsus 1·2 centims. Iris reddish; bill brown, except the basal half of lower mandible, which is yellow; *feet and tarsus coral-red!* Salvadori gives the colour of the feet as fuscous: in the Cat. Birds, vol. ix. it is stated to be dark brown. I should place little reliance on the label had it not been written by myself; it is borne out by the colour of the legs in the dried skin being a faded pinkish yellow. It is possible that the present example may be the immature bird of a new species. Banguay is separated from the N. point of Borneo by a shallow channel some eight miles in width.

CINNYRIS HASSELTII, Temm.*Nectarophila hasseltii*, Salvad. *op. cit.* p. 177.

♂. Sigaliud River, Sandakan.

CHALCOSTETHA INSIGNIS, Jard.*Chalcostetha insignis*, Salvad. *op. cit.* p. 177.

♂. Sarawak.

3 ♀. Libarran I., N. Borneo.

This species was very abundant on Libarran, an island lying two or three miles off the coast in Lubuk Bay; but during a two months' visit to the north of Borneo, I do not recollect ever having seen it elsewhere.

ANTHOTHREPTES MALACCENSIS, Scop.

Anthreptes malaccensis, Salvad. *op. cit.* p. 178.

3 ♂. Libarran I., N. Borneo.

♂. *juv.* Libarran I.

♀. Libarran.

♂. Usukan Bay, N. Borneo.

♀. Usukan Bay.

ANTHOTHREPTES HYPOGRAMMICA, S. Müll.

Hypogramma nuchalis, Salvad. *op. cit.* p. 172.

♂. "Borneo," exact locality unknown.

ANTHOTHREPTES PHÆNICOTIS, Temm.

Chalcoparia singalensis, Salvad. *op. cit.* p. 180.

♂. Bidi, Sarawak.

3 ♂. Silam.

Iris a dull dark pink.

ARACHNOTHERA CHRYSOGENYS, Temm.

Arachnothera chrysogenys, Salvad. *op. cit.* p. 181.

Silam, one specimen.

ARACHNOTHERA FLAVIVENTRIS.

Arachnothera eytonii, Salvad. *op. cit.* p. 182.

♂. Sigaliud River, Sandakan.

♀. Sigaliud River.

♀. Silam.

There appears to be an immense difference in size between the sexes. Thus the measurements of the three present examples are as follows:—

	Wing.	Bill from gape.	Tail.	Tarsus.
♂	11·2	4·5	6·5	2·2
♀	9·3	4·1	5·7	2·1
♀	9·4	3·8	5·3	2·1

The male is more yellowish on the upper surface, and somewhat brighter beneath. The female (No. 2) has the wing-coverts and wings irregularly spotted with dull yellowish-white. These birds frequented the high trees in small flocks, searching the flowers for insects.

ARACHNOTHERA MODESTA, Eyton.

Arachnothera modesta, Salvad. *op. cit.* p. 183.

♂ (?). Sigaliud River, Sandakan.

This individual is of unusual size. Wing 9·0 centims., bill from forehead 3·9 centims. ; tarsus 1·8 centims.

ARACHNOTHERA ROBUSTA, Müll. and Schleg.

Arachnothera robusta, Salvad. *op. cit.* p. 184.

2 ♀. Silam.

ARACHNOTHERA LONGIROSTRIS, Lath.

Arachnothera longirostra, Salvad. *op. cit.* p. 186.

♂. Silam.

ARACHNOTHERA CRASSIROSTRIS, Reichenb.

Arachnothera crassirostris, Salvad. *op. cit.* p. 187.

♀. Silam.

ÆGITHINA VIRIDIS, Bp.

Iora scapularis, Salvad. *op. cit.* p. 190.

♂. Cape Sapanmangio, N. Borneo.

Wings and tail black; no sign of black on the head.

CHLOROPSIS ZOSTEROPS, Vig.

Chloropsis sonneratii, Salvad. *op. cit.* p. 193.

♀. Silam.

CHLOROPSIS CYANOPOGON, Temm.

Phyllornis cyanopogon, Salvad. *op. cit.* p. 194.

2 ♂. Silam.

♂. Sarawak.

♂. Sandakan.

PYCNONOTUS PLUMOSUS, Blyth.

Pycnonotus plumosus, Salvad. *op. cit.* p. 198.

♂. Kudat, N. Borneo.

PYCNONOTUS SIMPLEX, Less.

Sandakan, one specimen.

RUBIGULA WEBBERI, Hume.

Ixidia squamata, Salvad. *op. cit.* p. 200.

Silam, one specimen.

MICROPUS MELANOCEPHALUS, Gm.

Brachypodius melanocephalus, Salvad. *op. cit.* p. 201.

♂. Silam.

The tail-feathers, and more especially the outer pair, are much more broadly tipped with yellow than is the case in the Malaccan birds with which I have been able to compare it.

HEMIXUS MALACCENSIS, Blyth.

Hypsipetes malaccensis, Salvad. *op. cit.* p. 202.

Silam, two specimens.

One of these is irregularly marked with buffish brown on the wing, chiefly on the greater wing-coverts and secondaries, but otherwise shows no signs of immaturity.

CRINIGER GUTTURALIS, Müll.

Criniger gutturalis, Salvad. *op. cit.* p. 206.

Silam, one specimen.

This example is much larger than the measurements given in

the Cat. of Birds. Culmen 2·4 centims., wing 11·5 centims., tail 10·1 centims., tarsus 2·2 centims.

CRINIGER PHÆOCEPHALUS, Hartl.

Criniger phaeocephalus, Salvad. *op. cit.* p. 207.

Silam, two specimens.

POMATORHINUS BORNEENSIS, Cab.

Pomatorhinus borneensis, Salvad. *op. cit.* p. 210.

Silam, two specimens.

STACHYRIS MACULATA, Temm.

Timelia maculata, Salvad. *op. cit.* p. 211.

♂. Silam.

STACHYRIS NIGRICOLLIS, Temm.

Timelia nigricollis, Salvad. *op. cit.* p. 212.

Silam, two specimens.

MIXORNIS BICOLOR, Blyth.

Cyanoderma erythropterum, Salvad. *op. cit.* p. 213.

♂. Sandakan.

♂. N. Borneo.

Iris crimson-lake; bill bluish-black; skin of side of head and neck bright cobalt-blue.

MIXORNIS CAGAYANENSIS, Guillemard.

♀. Abai, N. Borneo?

This individual agrees with those obtained on the island of Cagayan Sulu (*vide infra*, p. 419). The present example is without any tinge of chestnut on the upper surface. The striping appears almost entirely confined to the throat. Wing 6·1 centims., tail 6·0 centims.; bill from gape 1·8 centims., tarsus 1·9 centims.

It is just possible that this bird may have been wrongly labelled, and that its correct locality is the island of Cagayan Sulu.

DRYMOCATAPHUS CAPISTRATOIDES, Temm.

Drymocataphus capistratoides, Salvad. *op. cit.* p. 218.

Silam, one specimen.

KENOPIA STRIATA, Blyth.

Kenopia striata, Salvad. *op. cit.* p. 223.

Silam, one specimen.

ERYTHROCICHLA BICOLOR, Less,

Malacopteron ferruginosum, Salvad. *op. cit.* p. 228.

Silam, one specimen.

PITTA MUELLERI, Bp.

Pitta mülleri, Salvad. *op. cit.* p. 240.

♂. Silam.

♀. Silam.

2 *juv.* Silam.

Both the young birds have the throat white, and the forehead washed with chestnut. The white on the shoulder appears to become cobalt by gradual assumption of that colour in the feather, and not by moult.

PITTA BAUDII, Müll. & Schleg.

Pitta baudii, Salvad. *op. cit.* p. 243.

Three ad. (♂ ?). Silam.

Juv. (♂ ?). Silam.

♀ (?). Silam.

In none of these is there any note of the sex. The three adult birds are alike, except that in one the black nuchal collar is edged posteriorly with shining dark blue, thus forming a second collar of that colour. In the young bird the chin and upper throat are whiter, and the rest of the under surface rufescent, darker on the breast, and with some dark-blue feathers in the median line and on the flanks. Above, the head and nape are light brown, and the uropygium dark grey. The feathers of the back and scapulars are umber-brown, with the base dark grey. A few red feathers of the new moult are seen appearing irregularly here and there, especially in the scapular region.

The fifth example differs greatly from the others. On the upper surface the head is rufous, merging gradually on the back into the same shade of red as is seen in the adult male. Beneath, the throat is whitish, and the rest of the under surface a uniform buffish tint, the feathers black at the base. Bill brown; lores and sides of face fawn-colour.

The above individual has no appearance of immaturity, and I believe it to be the female. No allusion to any sexual differences of plumage is, however, made by Schlegel (Mus. Pays-Bas), Salvadori (Ucc. di Born.), or Elliot (Monog. Pittidæ).

PITTA SCHWANERI, Temm.

Pitta schwaneri, Salvad. *op. cit.* p. 243.

Two (♂ ?). Silam.

♀ (*vel juv.*). Silam.

The last example differs from the others in having the under surface buff, not yellow, but barred with bluish-black as in the adult male. The blue abdomen is replaced by greyish feathers tinged with rufous, which have lavender reflections in certain lights. Sinciput and vertex brown, with three or four longitudinal black stripes; supraocular stripe fawn-coloured in its anterior, yellow in its posterior half; subocular and auricular feathers black, tipped with fawn; occiput black. The bird is apparently mature.

GERYGONE FLAVEOLA, Cab.

Sandakan, one specimen.

This example corresponds in every way with those obtained at Meimbun during the visit of the 'Marchesa' to Sulu Island. It is slightly paler than Celebes skins; the lores are brownish white, and the external rectrices have no white on the outer web as in *G. sulphurea*.

ORTHOTOMUS CINERACEUS, Blyth.

Orthotomus cineraceus, Salvad. *op. cit.* p. 248.

♂. Sigaliud River, Sandakan.

2 ♂. Usukan Bay, N. Borneo.

CITTOCINCLA STRICKLANDI, Mottl. & Dillwyn.

Kittacincla stricklandii, Salvad. *op. cit.* p. 253.

♂. Kudat, N. Borneo.

♀. Banguay I., N. Borneo.

Silam, four specimens.

Iris light brown. Length 23·0 centims. The example from Banguay is smaller, and has the lower part of the back immediately above the white rump washed with orange-chestnut.

COPSYCHUS AMÆNUS, Horsf.

Copsychus amœnus, Salvad. *op. cit.* p. 255.

♂. Sigaliud River, Sandakan.

TURDUS PALLENS, Pall.

Turdus pallens, Salvad. *op. cit.* p. 256.

♀. Silam.

HENICURUS LESCHENAULTII, Vieill.

Henicurus frontalis, Salvad. *op. cit.* p. 258.

Three ad. sk. Silam.

Juv. Silam.

I can detect no constant differences in plumage between these individuals and the examples of *H. leschenaulti* in the British Museum. The much larger size of the Javan bird is, however, very noticeable. The following are the measurements in centimetres of the present examples and those given in the Cat. B.

	Wing.	Culmen.	Tarsus.
<i>H. leschenaulti</i> (Java)	10·9	2·4	3·0
„ (Borneo)	9·3	2·0	2·7

ANTHUS GUSTAVI, Swinh.

Silam, one specimen.

ORIOLOUS XANTHONOTUS, Horsf.

Oriolus xanthonotus, Salvad. *op. cit.* p. 277.

2 ♂. Silam.

♂ juv. Silam.

♂. Sigaliud River, Sandakan.

2 ♀. Silam.

The young male much resembles the females, but has the head somewhat darker, while the wing-coverts have no chestnut edgings. The median rectrices are black tipped with yellow, not olive-yellow; while, beneath, the chin and throat are dusky.

PLATYSMURUS ATERRIMUS, Temm.

Platysmurus aterrimus, Salvad. *op. cit.* p. 279.

♂. Sigaliud River, Sandakan.

Silam, one specimen.

PLATYLOPHUS CORONATUS.

Platylophus coronatus, Salvad. *op. cit.* p. 280.

2 ♂ ? Silam.

Juv. Silam.

♂. Sigaliud River, Sandakan.

OSMOTRERON VERNANS, Linn.

Treron vernans, Salvad. *op. cit.* p. 286.

♂. Kimanis River, N. Borneo.

The Punai appears to be extremely abundant at the western part of the North-Borneo Company's possessions.

OSMOTRERON OLAX, Temm.

Treron olax, Salvad. *op. cit.* p. 289.

2 ♂. Silam.

MYRISTICIVORA BICOLOR, Scop.

Carpophaga bicolor, Salvad. *op. cit.* p. 292.

Silam, three specimens.

These examples are all without black markings on the thighs and under tail-coverts, except a slight tipping of the latter in one case. Each has 14 rectrices, and the external pair are broadly tipped with black.

CHALCOPHAPS INDICA, Linn.

Chalcophaps indica, Salvad. *op. cit.* p. 299.

♂. Kudat, N. Borneo.

♂. Banguay I., N. Borneo.

ARGUSIANUS GRAYI, Elliot.

Argusianus grayi, Salvad. *op. cit.* p. 305.

♂. Silam.

♂. Sandakan.

EUPLOCOMUS NOBILIS, Sclat.

Euplocomus nobilis, Salvad. *op. cit.* p. 306.

♂. Silam.

2 ♂. Sandakan.

ROLLULUS ROULOUL, Scop.

Rollulus rouloul, Salvad. *op. cit.* p. 308.

3 ♂. Silam.

EXCALFACTORIA CHINENSIS, Linn.

Excalfactoria chinensis, Salvad. *op. cit.* p. 311.

♀. Silam.

ÆGIALITES PERONI, Temm.*Ægialites peronii*, Salvad. *op. cit.* p. 315.

♂. Usukan Bay, N. Borneo, June 4th.

STREPSILAS INTERPRES, Linn.*Strepsilas interpres*, Salvad. *op. cit.* p. 320.

♂. Libarran I., N. Borneo, April 16th.

TRINGA ALBESCENS, Temm.*Actodromas albescens*, Salvad. *op. cit.* p. 323.

Sandakan Bay, one specimen.

TRINGOIDES HYPOLEUCUS, Linn.*Tringoides hypoleucus*, Salvad. *op. cit.* p. 326.

Sandakan Bay, one specimen.

TOTANUS INCANUS, Gm.*Totanus incanus*, Salvad. *op. cit.* p. 329.

♀. Usukan Bay, N. Borneo, June 3rd.

NUMENIUS UROPYGIALIS, Gould.*Numenius phæopus*, Salvad. *op. cit.* p. 333.

Silam, one specimen.

GALLINAGO STENURA, Kuhl.*Gallinago stenura*, Salvad. *op. cit.* p. 334.

Silam.

SULA PISCATOR, Linn.*Sula piscator*, Salvad. *op. cit.* p. 368.

Silam, one specimen.

Section II. CAGAYAN SULU.

The island of Cagayan Sulu, lying, as it does, in an isolated position in the Sulu Sea, is extremely interesting to the ornithologist. Placed midway between Palawan and the islands of the Sulu Archipelago, with which latter it should on no account be confounded, it lies somewhat nearer to the coast of Borneo, from which, however, it is distant over fifty miles. It is of purely volcanic origin, and Admiral Keppel, so long ago as 1853, made us acquainted with its curious crater-lakes. It is not, however, with its geological aspects that we have to deal, but with its avifauna, which, I believe, has, up to the present, remained completely unexplored.

In April 1883 I visited the island in Mr. Kettlewell's yacht 'Marchesa,' remaining for about a week, and nearly ten months later we again touched there on our return voyage to Singapore. Although I collected diligently on both visits, the results were singularly meagre, and I do not recollect ever meeting with a locality so poor in bird-life. This, however, is probably owing to the island being, geologically speaking, of comparatively recent formation. The few species that were obtained are interesting as showing a mixed Philippine and Bornean ornis, with a decided preponderance of the latter.

The entire collection obtained upon the island numbers but fifteen species. Setting aside seven of these as being of wide distribution, we have eight species remaining. Of these, two only are Philippine—*Tanygnathus luzoniensis*, and a *Calornis*, which, though not specifically separable from *C. panayensis*, is of markedly larger dimensions. Two—*Chibia pectoralis* and *Carpophaga pickeringi*—occur, so far as we know, neither in Borneo nor the Philippines, but are found in the Sulu Islands; three of the remaining four are purely Bornean; and the last is a new species of *Mixornis*, probably peculiar to the island. It is interesting therefore to note that, while to the westward Cagayan Sulu is connected by shallow soundings with the great coral-reefs at the north of Borneo, to the east it is separated from the Sulu Archipelago by a comparatively deep sea.

1. *TANYGNATHUS LUZONIENSIS*, Linnæus.

a, b. ♂.

Iris yellow; bill scarlet; tarsus olive-green. The blue of the head is much brighter than in examples from Sulu Island, and is more extensive, occupying the vertex instead of being confined to the occipital region. A specimen from Lapac Island in the Sulu Archipelago is intermediate in this respect between the Sulu and Cagayan Sulu birds. The present examples have the under surface more strongly washed with golden yellow. The natives keep this species in captivity.

2. *SAUROPATIS CHLORIS*, Boddaert.

a, b. ♂.

Iris brown; bill leaden black, base of lower mandible whitish; feet brown. Abundant on the sea-shore and at the crater-lakes.

3. *EUDYNAMIS MALAYANA*, Cabanis.

a, b. ♂.

c. ♀.

Iris in male crimson; bill pea-green; feet and tarsus olive-green. Length of male 41·0 centims. Agrees with Bornean skins.

4. *CENTROCOCCYX EURYCERCUS*, Hay.

a. ♂.

Iris brown; bill black; tarsus lead-coloured. This species has been recorded from Palawan by Mr. Everett.

5. *LALAGE TERAT*, Boddaert.

a. ♂.

Iris yellow; bill and feet black. Not distinguishable from Bornean or Philippine examples, but peculiar in having a yellow iris.

6. *CHIBIA PECTORALIS*, Wallace.

a-c. ♂.

d. ♀.

Iris ruddy brown in *a*, brown in the female *d*; in the others I have made no note of the colour. Bill and tarsus black. A close comparison with skins from Sulu Island which, from the presence of



Guillemard, F. H. H. 1885. "Report on the Collection of Birds made during the Voyage of the Yacht 'Marchesa'. Part II. Borneo and the Island of Cagayan Sulu." *Proceedings of the Zoological Society of London* 1885, 404–420.

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