

✓ Birds

5-01
N.M.

A MONOGRAPH
OF
THE NECTARINIIDÆ,
OR
FAMILY OF SUN-BIRDS.

BY
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LONDON:
PUBLISHED BY THE AUTHOR,
6 TENTERDEN STREET, HANOVER SQUARE, W.
1876-1880.



CINNYRIS AURICEPS.
CINNYRIS MOROTENSIS

+ CINNYRIS MOROTENSIS.

(MORTY ISLAND BLACK SUN-BIRD.)

?*Hermotimia auriceps* (pt.), Salvad. Att. R. Ac. Tor. x. p. 229 (1874).

♂ *ad.* similis *C. auricipiti*, sed pileo aurato-viridi ut in *C. aspasiæ* colorato: ptilosi chalybeo-viridi nec violaceâ nitente distinguendus.

Hab. in insulâ Moluccensi "Morty" vel "Morotai" dictâ.

Adult Male. Differs from *C. auriceps* only in the much greener shade of the crown, which is of the same colour as in Dorey specimens of *C. aspasiæ*; the least and median series of wing-coverts, the scapulars, lower back, upper tail-coverts, and the edges of the tail-feathers are greenish-shaded steel-blue, with no lilac shade, excepting on some of the median series of wing-coverts, which are edged with lilac, and the edges of the tail-feathers, which are glossed with violet; the metallic throat is of a uniform deep greenish-shaded steel-blue like the lower back; bill and legs black; irides dark brown. Total length 4.5 inches, culmen 0.7, wing 2.4, tail 1.8, tarsus 0.6.

HAB. Morty Island.

THE type of this species, a fully adult male, was collected by Mr. Wallace in Morty Island, and is now in the British Museum. The specimen bears Mr. Wallace's own label; so that there is no doubt of its having come from the island of Morty, although in the numerous published records of his collections I have failed in finding any mention of a Sun-bird of this group having been obtained by him in that locality.

Like *C. auriceps* the present bird may be distinguished from all the other members of the "*Hermotimia*" group by its having the throat and lower back of the same shade of steel-blue. The characters which separate this bird from *C. auriceps* are the greener crown and the deep green instead of a violet shade to the steel-blue portions of the plume. These characters, if constant, as I suspect they will prove to be, are sufficiently well marked.

It appears to me probable that the specimens mentioned by Count Salvadori (*l. c.*), viz. one in Count Turati's collection and the adult male in the Turin Museum, may belong to this species.

shade on the forehead; one male from Basilan has the entire forehead metallic violet, and the centre of the chest slightly shaded with orange, while a second male from the same island has no metallic colouring on the forehead, and no shade of orange on the chest.

An immature male from Leyte is similar in plumage to the female, excepting that it has a broad, black, partially metallic band down the centre of the throat. In this group of Sun-birds the adult dress appears generally in the form of a central band of metallic colours on the throat, while in the "*Hermotimia* group" the metallic feathers are generally first assumed on the sides of the throat.

The Nestling, "♀, Butuan, May 1877" (*Everett*). Upper parts olive; wings dark brown with broad olive-yellow edges to all the feathers; tail black with the outer feathers on each side white, and with white ends to some of the others; ear-coverts olive like the back; eyebrows, cheeks, and entire underparts bright yellow. Total length 2.5 inches, culmen 0.4, wing 1.55, tail 0.6, tarsus 0.55.

Page 153. CINNYRIS FRENATUS. Add:—

Cyrtostomus frenatus, Bp. Comptes Rendus, 1854, p. 265; Salvad. Ann. Mus. Civ. Genova, vii, pp. 400, 658, 777, 825 (1875), viii, p. 30 (1876), x, p. 143 (1877); id. Atti R. Acc. Sc. Torino, xii, p. 317 (1877); id. P. Z. S. 1878, p. 97.

Nectarinia eximia, Gray, P. Z. S. 1858, p. 190; id. 1861, p. 433.

?*Nectarinia zenobia*, Gray, P. Z. S. 1859, p. 155; 1860, p. 348, part., "Gilolo;" 1861, p. 433, part., "New Guinea."

Nectarinia frenata, Finsch, Neu-Guinea, p. 163 (1865); D'Albertis, Ibis, 1877, p. 367; Sclat. P. Z. S. 1877, pp. 103, 553; Forbes, P. Z. S. 1878, p. 125; Sclat. tom. cit. p. 289; Finsch, P. Z. S. 1879, p. 11.

Cinnyris frenatus, Ramsay, Proc. Linn. Soc. New S. Wales, iii, p. 287 (1878).

Arachnechthra frenata, Meyer, Ibis, 1879, p. 131.

I entered this species by error as found in the island of Ceram, on the authority of a female specimen so labelled. This specimen was collected by Mr. Wallace; and I now feel confident that it should be referred to *C. zenobia*. *C. frenatus* and *C. zenobia* are not, I believe, to be met with on the same islands; so that the *N. zenobia*, Gray, in the above synonymy probably belongs here.

The eggs of this species, according to Mr. Ramsay, "are three in number, whitish or pinkish white, with red spots, or dots, some sparingly, others thickly blotched."

Page 161. CINNYRIS FLAMMAXILLARIS. Add:—

?*Anthreptes gularis*, Licht. Nomencl. Av. p. 56 (1854).

Arachnechthra flammaxillaris, Stoliczka, J. A. S. B. xxxix, p. 301 (1870); Blyth & Walden, Cat. Mamm. & B. Burma, p. 141 (1875); Armstrong, Str. F. iv, p. 313 (1876); Oates, Str. F. v, p. 148 (1877); Hume & Davison, Str. F. vi, pp. 192, 507 (1878).

Mr. Oates writes to me from Pegu, 4th September 1877, that "it is an error to suppose this

- d*^m. Secondaries edged with metallic green *collaris*, p. 339.
e^m. Secondaries edged with olive-yellow, glossed with gold on the
 inner feathers *zambesiana*, p. 343.
f^m. Secondaries edged with olive-yellow without metallic lustre . *hypodila*, p. 345.

Page 305. ANTHREPTES HYPOGRAMMICA. Add:—

- Anthreptes hypogrammica*, Licht. Nomencl. Av. p. 55 (1854); Brügg. Abhandl. Ver. Bremen, v, p. 458 (1876); Hume & Davison, Str. F. vi, p. 178 (1878); Sharpe, Ibis, 1879, p. 260.
Hypogramma nuchalis, Hume, Str. F. iii, p. 319 (1875).
Anthreptes nuchalis, Bouvier, Bull. Soc. Zool. France, ii, p. 300 (1877).

Page 309. ANTHREPTES SIMPLEX. Add:—

- Anthreptes simplex*, Sharpe, Ibis, 1877, p. 18; Brügg. Abhandl. Ver. Bremen, v, p. 458 (1877); Hume & Davison, Str. F. vi, p. 188 (1878); Sharpe, Ibis, 1879, p. 260.
Arachnophila simplex, Tweedd. Ibis, 1877, p. 301; Salvad. Ann. Mus. Civ. Genova, xiv, p. 212 (1879).
Arachnothera simplex, Bouvier, Bull. Soc. Zool. France, ii, p. 300 (1877).

Page 313. ANTHREPTES RHODOLEMA. Add:—

- Anthreptes rhodolema*, Sharpe, Ibis, 1879, p. 260.

Mr. Sharpe records this species for the first time from Borneo upon the authority of a specimen collected by Mr. W. H. Treacher on the Lâwas River.

Page 315. ANTHREPTES MALACCENSIS. Add:—

- Cinnyris lepidus*, Vieill. N. Dict. d'Hist. Nat. xxxi, p. 504 (1819).
Nectarinia lepida, Drapiez, Dict. Class. xv, p. 512 (1829).
Anthreptes malaccensis, Bp. Comptes Rendus, 1854, p. 265; Tweedd. P. Z. S. 1878, p. 621; Hume & Davis. Stray F. vi, p. 186 (1878); Salvad. Ann. Mus. Civ. Genova, xiv, p. 213 (1879); Nicholson, Ibis, 1879, p. 166; Sharpe, P. Z. S. 1879, p. 342.

The locality Flores should be taken from the range of this species; for the Flores specimen which I have examined I now consider to belong to *A. celebensis*.

In the Paris Museum I have examined adult males from Igikas and Bang-kok, in Siam, on the authority of Bocourt, and from Cochin China (*Harmand*).

Page 319. ANTHREPTES CELEBENSIS. Add:—

- Anthreptes celebensis*, Meyer, Ibis, 1879, p. 131.

The adult male and the three immature males collected by Mr. Wallace in Flores, which I

previously referred to *A. malaccensis*, I am now convinced should belong to this species, as well as another specimen collected by Mr. Wallace which I have examined in the Paris Museum. Dr. Meyer, from his personal notes on the birds of Celebes (*Ibis*, 1879, p. 131), writes:—"A common bird in the Minahassa. Togian Islands, August; Limbotto, July. South Celebes: Batubassi, November; Makassar, Tello, January. Iris red; feet greyish green; claws grey; sole of the foot yellow; bill black. Feeds on insects."

Page 321. ANTHREPTES CHLORIGASTRA. Add:—

Anthothreptes chlorogaster, Tweedd. P. Z. S. 1877, p. 763; 1878, pp. 287, 951; 1879, p. 72.

Mr. A. H. Everett has collected this species at Valencia, at the southern extremity of Negros, on the island of Zebu, and also from Zamboanga, in Mindanao, and on the island of Basilan. The specimens from Zamboanga and Basilan are of rather small size; the only adult male, from Zamboanga, measures—total length 4·9 inches, culmen 0·7, wing 2·6, tail 1·75, tarsus 0·7; and the throat is strongly shaded with rufous.

Page 325. ANTHREPTES PHÆNICOTIS. Add:—

Nectarinia phænicotis, Drapiez, Dict. Class. xv, p. 513 (1829).

Chalcoparia singalensis, Hume & Davison, Str. F. vi, p. 189 (1878).

Chalcoparia cingalensis, Anderson, Anat. & Z. Researches, Yunnan Exped. p. 662 (1878).

Anthreptes phænicotis, Nicholson, *Ibis*, 1879, p. 166; Sharpe, tom. cit. p. 260; id. P. Z. S. 1879, p. 342.

Chalcoparia phænicotis, Salvad. Ann. Mus. Civ. Genova, xiv, p. 214 (1879).

The tongue of this species is of the ordinary *Anthreptes* type—bifurcated, and not quite so long as in *Cinnyris*; this I have ascertained from the examination of a specimen kindly sent to me in spirits by Mr. Hume for this purpose, which is now preserved in the British Museum.

In Yunnan this species has been recorded by Mr. Anderson from Sawady.

Page 331. ANTHREPTES RECTIROSTRIS. Add:—

Mangusia rectirostris, Bp. Comptes Rendus, 1854, p. 265.

Nectarinia fantensis, Sharpe, *Ibis*, 1871, pp. 441, 470.

Nectarinia gabonica, Sharpe, Cat. Afr. B. p. 41 (1871); id. *Ibis*, 1872, p. 70.

In my original article I describe an immature bird as the adult female, and the throat of that specimen as being buffish yellow instead of ashy white. The true adult female of this species I now feel confident is the *Nectarinia gabonica*, Sharpe (nec Hartl.), of which the following is a description:—

Upper parts ashy brown slightly tinted with olive towards the lower back; wings and tail rather darker brown with the edges of the feathers paler and shaded with olive; tail tipped with white, most broadly

1875. BOUVIER, A. Afrique occidentale: Catalogue géographique des Oiseaux recueillis par MM. A. Marche et le Marquis de Compiègne (8vo), pp. 13, 14.

Nectarinia affinis, Rüpp., apud Bouvier, = *Cinnyris venustus*. Some of the localities are interesting; for instance, this is the first mention of *Cinnyris superbus* from so far north as Cape Verd, and of *C. cyanolæma* from Sierra Leone.

1875. BROOKS, W. EDWIN. Notes upon a Collection of Birds made between Mussoori and Gangaotri in May 1874. Str. F. vol. iii, p. 233.

1875. BUTLER, Captain E. A. Notes on the Avifauna of Mount Aboo and Northern Guzerat. Str. F. vol. iii, p. 462.

1875. HUME, ALLAN. A First List of the Birds of Upper Pegu. Str. F. vol. iii, pp. 15, 85-87.

1875. HUME ALLAN. A Second List of the Birds of Tenasserim. Str. F. vol. iii, pp. 319, 320.

Anthreptes xanthochlora, sp. n., = *Anthreptes simplex* (S. Müll. 1843).

1875. LEGGE, Lieut. W. VINCENT. On the Birds of the South-eastern Subdivision of Southern Ceylon. Ibis, 1875, pp. 276-286.

1875. MORGAN, RHODES W. On the Nidification of certain South-Indian Birds. Ibis, 1875, pp. 315, 316.

1875. RAMSAY, E. PIERSON. List of Birds met with in North-eastern Queensland, chiefly at Rockingham Bay. P. Z. S. 1875, p. 598.

1875. REICHENOW, DR. ANTON. Zur Vögelfauna Westafrika's. Ergebnisse einer Reise nach Guinea. J. f. O. 1875, pp. 30, 31.

This paper contains many useful notes, such as a description of the nest of *C. cupreus*, the occurrence of *C. venustus* in Aguapim, &c.

1875. SALVADORI, Count T. Intorno a due collezioni di uccelli di Celebes inviate al Museo Civico di Genova dal Dr. O. Beccari e dal Sig. A. A. Bruijn. Ann. Mus. Civ. Genova, vol. vii (1875), pp. 658-661.

Æthopyga beccarii, sp. n., = *Æ. flavostriata* (Wallace, 1865).

Æ. beccarii, Salvad., and *Hermotimia porphyrolæma* (Wallace) are figured (pl. 17).

1875. SALVADORI, Count TOMMASO. Catalogo di una collezione di uccelli del gruppo di Halmaheya e di varie località della Papuasias, inviato in dono al Museo Civico di Genova dal Sig. A. A. Bruijn. Ann. Mus. Civ. Genova, vol. vii (1875), p. 777.

1875. SALVADORI, Count T., and D'ALBERTIS, L. M. Catalogo di una collezione di uccelli dell'isola Yule e della vicina costa meridionale della penisola orientale della Nuova Guinea, raccolti da L. M. D'Albertis. Ann. Mus. Civ. Genova, vol. vii (1875), p. 825.

ÆTHOPYGA EXIMIA.

(KUHLS' YELLOW-BACKED SUN-BIRD.)

Nectarinia eximia, Horsf. Trans. Linn. Soc. xiii, p. 168 (1820); Jard. Monogr. Sun-birds, p. 268 (1842); Gray, Gen. B. i, p. 98 (1847); Bp. Consp. Av. i, p. 405, no. 16 (1850).

Nectarinia kuhlii, Temm. Pl. Col. pl. 376, figs. 1, 2 (1825); S. Müll. & Schl. Verhand. Zool. Aves, p. 56 (1846); Schl. Handb. Dierk. p. 256 (1857).

Cinnyris kuhlii, Less. Man. d'Orn. ii, p. 36 (1828).

Cinnyris eximia, Vig. Mem. Raffles, p. 673 (1830).

Æthopyga eximia, Cab. Mus. Hein. i, p. 103 (1850); Reichb. Handb. Scansoriae, p. 303, no. 709, pl. 587, figs. 3984-85 (1854); Bp. Comptes Rendus, xxxix, p. 265 (1854); Horsf. & Moore, Cat. B. E.I. Co. Mus. ii, p. 736 (1856); Walden, Ibis, 1870, p. 37.

Anthreptes eximia, Licht. Nomencl. Av. p. 56 (1854).

Promerops eximia, Gray, Hand-l. B. i, p. 109, no. 1340 (1869).

♂ *ad.* suprâ olivascenti-flavus: fronte et vertice, supracaudalibus et rectricum nigrarum marginibus latis metallicè viridibus: uropygio latè flavo: gutture toto et pectore rubris: fasciâ jugulari transversâ \wedge -formi metallicè violacè: corpore reliquo subtùs sordidè olivascente: subalaribus et corporis lateribus albis.

♀ *ad.* olivascenti-flava, capite magis sordidiore, viridescente: gulâ cinerascente: corporis lateribus albis.

Hab. in insulâ "Java" dictâ.

Adult Male. Upper parts, as well as the sides of the head and neck, olive-yellow; forehead and crown metallic green; in front of the eyes a triangular patch of black feathers; wings dark brown, with the least and median series of coverts and broad margins to the other feathers olive-yellow; lower back bright yellow; upper tail-coverts metallic green; tail black, with the basal half of the centre feathers and the margins of the others metallic green; chin, throat, and front of the chest red; the middle of the throat traversed by a metallic lilac band forming an angle directed upwards; a broad, dusky olive band down the centre of the breast; thighs and under tail-coverts the same colour, but rather paler; sides of the body white; under surface of the wings dark brown, with the inner margins of the quills and the coverts white; bill, upper mandible dark brown, lower one paler brown; irides and legs dark brown. Total length 5.2 inches, culmen 0.8, wing 2.3, tail 2.4, tarsus 0.6.

Adult Female. Olive-yellow; quills and tail-feathers dark brown, broadly edged with olive-yellow, the latter having broad pale ends, barely perceptible, excepting from beneath; chin and upper half of the throat inclining to ashy grey; sides of the body white. Total length 4.3 inches, culmen 0.7, wing 2.15, tail 1.7, tarsus 0.65.

HAB. Java.

THE following characters will readily distinguish this well-marked species. It has no metallic moustachial stripe; the throat is red, traversed about halfway down by a \wedge -shaped bar of



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metallic violet, the angle of which points upwards. In both sexes the flanks are white, and contrast strongly with the centre of the body, which in the male is dusky olive, and in the female bright olive-yellow.

It is only known to inhabit the island of Java, where, according to Dr. Horsfield, the native name is "Plichi Kembang." Some five years after Dr. Horsfield's original description, it was renamed after Kuhl, a young Dutch naturalist of great promise, whose sad fate in the cause of science justly entitled him to the warm sympathies expressed by Temminck in the 'Planches Coloriées.'

Müller and Schlegel give an interesting account of this species. It is distributed over the highest mountain regions of the island, where it is found at elevations of from 8000 to 9000 feet above the sea-level. Here it frequents the bushes which grow in the clefts of the lava-streams of these volcanic ranges, and breeds in the high elevations during the dry season in May and June. It feeds around the flowering-plants upon insects and their larvæ, and occasionally upon small berries, and during the cooler months descends into the valleys, and may then be seen flitting about the coffee-plantations and native gardens.

The specimens here figured and described are a male collected by Mr. Wallace, belonging to the Marquis of Tweeddale, and a female in my own collection.

ÆTHOPYGA FLAVOSTRIATA.

(CELEBEAN YELLOW-BACKED SUN-BIRD.)

Nectarinia flavostriata, Wallace, P. Z. S. 1865, p. 478, pl. 19. fig. 2; Brügg. Abhandl. nat. Ver. Bremen, v. p. 73 (1876).

Promerops flavostriata, Gray, Hand-l. B. i. p. 110. no. 1349, part. (1869).

Æthopyga flavostriata, Walden, Ibis, 1870, p. 35; id. Trans. Z. S. viii. p. 71 (1874); Salvad. Ann. Mus. Civic. Genova, vii. p. 659 (1875).

Nectarophila, sp.?, Walden, Ibis, 1870, p. 42. no. 30.

Nectarinia, sp.?, Walden, Trans. Z. S. viii. p. 71 (1874).

Æthopyga beccarii, Salvad. Ann. Mus. Civic. Genova, vii. p. 659 (1875).

♂ *ad.* suprâ sanguineus: fronte et sincipite, supracaudalibus et rectricum marginibus violaceis chalybeo nitentibus: uropygio flavo: caudâ nigrâ: alis saturatè brunneis, tectricibus minimis et medianis sanguineis dorso concoloribus, tectricibus majoribus remigibusque saturatè rubro marginatis: gutture et præpectore scarlatinis, pallidè flavo conspicuè striolatis, strigâ mystacali utrinque nigrâ metallicè violacèâ nitente: corpore reliquo subtùs saturatè fuscescenti-olivaceo: maxillâ saturatè brunneâ, mandibulâ pallidiore; iride saturatè brunneâ.

♀ *ad.* suprâ olivascenti-viridis, capitis collique lateribus pileo concoloribus: alis saturatè brunneis, tectricibus minimis et medianis dorso concoloribus, tectricibus majoribus remigibusque rubro latè marginatis: caudâ brunnescenti-nigrâ rubro lavatâ, rectricibus latè rubro marginatis et ad apicem pallidioribus: subtùs omnino flavicanti-olivacea.

♂ *juv.* similis femine adultæ, sed plumis verticis quibusdam rubro marginatis: collo postico, interscapulio et scapularibus ferè omnino sanguineis, supracaudalibus olivascenti-flavis: tectricibus alarum minimis et medianis rubro marginatis: plumis quibusdam pectoralibus rubro variis.

Hab. in insulâ "Celebes" dictâ.

Adult Male. Upper parts deep blood-red; forehead and front half of the crown violet-shaded steel-blue; lower back yellow; upper tail-coverts and broad margins of the tail-feathers violet-shaded steel-blue, the remainder of the tail black; wings dark brown, the least and median series of coverts red like the back, the greater coverts and the quills narrowly edged with dark red; feathers in front of the eyes black; the cheeks deep red; lores, chin, throat, and front of the breast bright scarlet-red, strongly streaked with pale yellow, especially towards the chin; a metallic violet and black moustachial streak extending from the beak to about halfway down the sides of the throat; remainder of the breast, abdomen, and under tail-coverts very dark dusky olive; under surface of the wings dark brown, with the coverts and the inner margins of the quills white; bill dark brown, with the lower mandible paler; legs and irides dark brown. Total length 4.6 inches, culmen 0.7, wing 2.1, tail 1.9, tarsus 0.55.

Adult Female. Upper parts olive-green, as well as the sides of the head and neck, the forehead and crown browner; wings dark brown, with the least and median series of coverts olive-green, greater coverts and quills broadly edged with red; tail brownish black, washed with red, the feathers broadly edged



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with red, and with pale ends; entire underparts pale yellowish olive. Total length 4.2 inches, culmen 0.75, wing 2, tail 1.6, tarsus 0.55.

Young Male. Forehead, crown, and nape olive-brown, with some of the feathers of the crown edged with red; back of the neck, upper back, and the scapulars blood-red, with the base of the feathers olive-yellow, which colour shows through to a certain extent; lower back olive; upper tail-coverts olive-shaded yellow; wings and tail dark brown, with all the feathers broadly edged with blood-red; the edges of the wing-coverts partially mottled with olive-yellow; the tail-feathers, with the exception of the two centre ones, having broad pale ends; the entire underparts as well as the cheeks pale yellowish olive; a few of the feathers on the front of the breast mottled with red. Total length 3.7 inches, culmen 0.65, wing 1.8, tail 1.5, tarsus 0.55.

Male in moult. Similar in plumage to the adult male, but with all the tail-feathers broadly edged with blood-red, excepting the two centre ones, which are edged with violet-shaded steel-blue, while on the centre of the breast there is a patch of pale yellowish olive.

HAB. Celebes.

THE Yellow-backed Sun-bird of the island of Celebes belongs to the section of *Æthopyga* in which the metallic portions of the crown and the upper tail-coverts are steel-blue, and in which the throat is red margined by a steel-blue moustachial streak. It occupies an intermediate position between *Æ. siparaja* and *Æ. magnifica* as regards its colouring and size, as it does in its geographical distribution. From both of these birds it may be distinguished by the yellow streaks on the throat, whence it has derived its name, as well as by the dusky olive colour of its abdomen.

The first mention we find of this bird is in a letter by Mr. Wallace (*Ibis*, 1860, p. 140), where he writes:—"I have just returned from a three-months' exploration of Menado and the surrounding district of Minahassa, forming the north-eastern extremity of the Celebes. I first visited the most elevated districts, taking up my residence in a village at an elevation of 3500 feet. I then removed to a forest district beyond the lake of Tondano, at an elevation of 1500 feet. Of the few species I obtained, however, several were new to me; one was a most lovely *Cinnyris* with scarlet breast and yellow-striped throat (I hope a new species)."

This was probably the identical specimen which five years later he made the type of his *Nectarinia flavostriata*, and is the one in the British Museum from which I have described the adult male. My descriptions of the adult female and of the male in moult are also taken from Mr. Wallace's specimens in our national collection, while that of the young male is from Count Salvadori's type specimen of *Æthopyga beccarii*.

Count Salvadori (*l. c.*) mentions that Signor Beccari collected two adult males at Kandari, on the western coast, in June 1874, as well as the type of his *Æ. beccarii*, which he recognizes as a young bird; but at the time he wrote, naturalists were not apparently aware that some, though not all, of this group of *Æthopygæ* have these red shades in the plumage of the females and young males, and apparently also in adult males during their moult. This, however, is found to be the case in this species as well as in *Æ. magnifica* from the Philippines, but is not met with in the females and young males of the nearly allied *Æ. siparaja*.

Dr. Brüggemann first drew my attention to the fact that *Æ. beccarii* belongs to this species;

and in his notes upon the ornithology of Celebes and the Sanghir Islands (*l. c.*) he supposes the plumage of the female and young male to be identical. It appears to me, however, that the plumage of the hen bird is never quite so red as the young male (*Æ. beccarii*, Salvad.), though I should mention that none of the specimens which I have examined have any indication of their sex on the labels. My adult female is probably the identical specimen of which the Marquis of Tweeddale writes (*Ibis*, 1870, p. 42):—"Mr. Wallace possesses an example of what appears to be the young male of a sixth species from Celebes."

Dr. Brüggemann further writes to me:—"I am quite certain that I am right in pronouncing the plumage of *Æ. beccarii* to be that of the young male as well as the female of this species. Not only do the two birds agree exactly in size and structure, but the *currucarian* plumage of *Æ. flavostriata* had never before been described. I have also examined several specimens in transitional plumage. By these it is shown that the full plumage is obtained partly by moult, partly by change of coloration, as indicated in my Celebes paper. The red edges to the quills and tail-feathers appear to be worn off; and thus the wings and tail assume a uniform brownish black colour."

The figures in the Plate are drawn from an adult male in the Marquis of Tweeddale's collection and from Count Salvadori's type specimen of *Æ. beccarii*.

CINNYRIS GRAYI

(GRAY'S SUN-BIRD.)

Nectarinia grayi, Wallace, P. Z. S. 1865, p. 479; Brügg. Abhandl. Ver. Bremen, v. p. 72. no. 79 (1876).

Promerops grayi, Gray, Hand-l. B. i. p. 110. no. 1359 (1869).

Nectarophila grayi, Walden, Ibis, 1870, p. 42, pl. 1. fig. 2; id. Tr. Zool. Soc. viii. p. 71 (1874); Salvad. Ann. Mus. Civic. Genova, vii. p. 660. no. 39 (1875).

Hermotimia grayi, Salvad. Atti R. Acc. Sc. Torino, xii. p. 310 (1877).

♂ *ad.* fronte et vertice viridiscienti-aureis: genis, regione paroticâ, et collo laterali et postico nigris: tergo summo saturatè rubro: tectricibus alarum minimis et scapularibus basaliter chalybeis: dorso postico et supracaudalibus etiam chalybeis: alis et scapularibus aliter nigris, tectricibus alarum medianis quibusdam rubro variis: caudâ indigotico-nigrâ, rectricibus chalybeo marginatis: mento gulâque metallicè lilacinis, utrinque metallicè chalybeo marginatis: præpectore saturatè rubro: corpore reliquo subtùs nigro.

♀ *ad.* suprâ cinerascenti-brunnea, tergo, scapularibus, et tectricibus alarum minimis et medianis olivaceo lavatis: alis saturatè brunneis, olivascenti-flavo limbatis: supracaudalibus caudâque nigris, rectricibus externis albo terminatis: mento gulâque albis: pectore et subcaudalibus pallidè flavis.

Hab. in insulâ Celebensi.

Adult Male. Forehead and crown golden, slightly shaded with green; cheeks, ear-coverts, sides and back of the neck black; upper back deep red; least series of wing-coverts, basal portion of the scapulars, the lower back, and the upper tail-coverts steel-blue with green and violet reflections; remainder of the wings and scapulars black, with some of the median series of coverts mottled with deep red; tail blue-black, the feathers edged with the same steel-blue as the lower back; chin and throat metallic lilac, with a well-defined narrow steel-blue margin on each side; front of chest deep red; remainder of the under surface of the body and wings black; bill and legs black; irides dark brown. Total length 4.25 inches, culmen 0.65, wing 2.15, tail 1.6, tarsus 0.55.

Adult Female. Upper parts ashy brown, with the entire back, the scapulars, and the least and median series of wing-coverts shaded with olive; remainder of the wings dark brown, with the greater series of coverts and the quills broadly edged with olive-yellow; upper tail-coverts and the tail black, the latter with white tips to some of the outer feathers; chin and throat white; breast and under tail-coverts pale yellow; under surface of the wings brown, with the coverts and the inner margins of the quills white, the former shaded with sulphur-yellow. Total length 3.6 inches, culmen 0.6, wing 2.0, tail 1.3, tarsus 0.55.

Young Male. Similar in plumage to the adult female, excepting that the forehead and crown are shaded with olive, and the chin and throat are washed with sulphur-yellow. Total length 4.3 inches, culmen 0.65, wing 2.1, tail 1.4, tarsus 0.55.

Male in moult. Similar in plumage to the adult female, excepting that the upper parts are rather more



CINNYRIS GRAYI.

strongly shaded with olive, and the metallic parts are beginning to appear on the crown, tail, and sides of the throat.

HAB. Celebes.

THE members of the "Black" group, separated by many authors from *Cinnyris* under the generic title *Hermotimia*, form a very natural division of the Sun-birds. The metallic portions of their plumage are confined to the crown, throat, wing-coverts, scapulars, lower back, and margins of the tail-feathers; and in these characters, as well as from the frontal feathers extending onto the membrane which covers the nostrils, they are closely allied to the "*Nectarophila*" group—but may be readily distinguished from that section by the larger size, especially of their bills and tails, and by their general black coloration. The only exception to this rule is found in the present species (*C. grayi*), which is slightly aberrant in its style of coloration.

The above-named groups inhabit distinctly different areas, the *Hermotimiae* being restricted to the Celebean and Papuan subregions.

The present group may with advantage be further divided into two sections:—

1st. Those species with the metallic portions of the wings and lower back steel-blue.

2nd. Those species with the above-named parts of the plumage metallic green (often more or less shaded with blue).

The first of these sections, to which the present species belongs, is restricted to the Celebean subregion and to the Northern Moluccas.

From the other members of this section the birds restricted to the Celebes and Sanghir islands are distinguished by having their metallic throats margined on each side by a sharply defined steel-blue band, and by the median series of wing-coverts and the greater portion of the scapulars being non-metallic. The present species may be readily distinguished by the red colour of the upper back and front of the chest.

On account of the red colouring, it has been placed by some naturalists in Reichenbach's genus *Nectarophila*, which constitutes my second group of the genus *Cinnyris*; but I do not consider this to be its natural position, as it agrees perfectly with the members of the present section in its general structure, especially in the form and length of the bill and tail.

It is entirely confined to the island of Celebes, where it has been collected at Tondano and Menado by Mr. Wallace, who named this bird in honour of the late Mr. G. R. Gray. Dr. Brüggemann (*l. c.*) describes the female and young male as similar in plumage, "with the upper parts olive-green, and the underparts sulphur-yellow; the wings dark brown with bright olive-green margins to the feathers; the tail black, with the two outer feathers with white tips." He further observes that during the time the young bird gradually attains its brilliant plumage it undergoes a remarkable change, the upper part of the head being then ashy grey and the throat white.

I have examined three fully plumaged males, two males in partial moult, one young male, and two adult females. The specimen which I have here figured and described as the adult female is the only one of these in which the sex is not indicated on the label; but in the British Museum there are two specimens collected by Mr. Wallace at Menado, one being labelled "female" and the other "young male:" the former agrees perfectly with the specimen I have

figured and described as the adult female, while the latter is the specimen from which I have taken my description of the immature male.

With this series of specimens before me, I think I may safely refer the plumage described by Dr. Brüggemann as that of the "female as well as of the young," to young birds only. As his specimens were no doubt carefully sexed at the time, it would appear that the young female, as well as the young male, possesses a yellow throat. Since writing the above, Dr. Meyer has kindly forwarded to me, for examination, two yellow-throated specimens collected by him at Menado, and labelled "female:" these, from the texture of the feathers, are undoubtedly young birds.

The only species of this group which has the entire underparts yellow in the adult female is *C. sangirensis*; but here we find the throat also yellow in the males during their moult. In *C. auriceps* the adult female has the throat white; but in very young specimens, whose feathers have not yet quite passed out of the down, the throat is yellow; and this appears to be generally the case in young birds of this group.

The adult male I have figured and described is from one of Mr. Wallace's specimens in the Marquis of Tweeddale's collection.

CINNYRIS PORPHYROLÆMUS.

(CELEBEAN BLACK SUN-BIRD.)

Nectarinia aspasia (pt.), Schl. & Müll. Verhand. Zool. Aves, p. 58 (1846).*Nectarinia porphyrolæma*, Wallace, P. Z. S. 1865, p. 479.*Promerops porphyrolæma*, Gray, Hand-l. B. i. p. 110. no. 1360 (1869).*Chalcostetha porphyrolæma*, Walden, Ibis, 1870, p. 46; id. Tr. Z. S. viii. p. 71 (1874);

Meyer, Sitz. k. Ak. Wissensch. Wien, lxx. p. 122 (1874).

Hermotimia porphyrolæma, Salvad. Atti R. Acc. Sc. Tor. x. pp. 208, 232 (1874); id. Ann.

Mus. Civic. Genova, vii. p. 660. no. 38, pl. 18. fig. 3 (1875); id. Atti R. Acc. Sc. Torino,

xii. p. 310 (1877).

♂ *ad.* niger, saturatè indigotico nitens: pileo summo metallicè aurato-viridì: tectricibus alarum minimis, dorso postico et supracaudalibus chalybeis, vix violaceo nitentibus: rectricibus nigris, extùs chalybeis: mento gulâque metallicè rubescenti-lilacinis: strigâ mystacali viridescente, chalybeo lavatâ: rostro nigro: pedibus et iride saturatè brunneis.

♀ *ad.* pileo postico et cervice cineraceis: dorso, scapularibus et tectricibus alarum minimis olivaceis: alis aliter saturatè brunneis, plumis latè olivaceo marginatis, remigibus flavicanti-olivaceo limbatis: rectricibus nigris, plumis albo terminatis, externis latiùs: gulâ albâ: pectore, abdomine et subcaudalibus sulfureis: alis infrâ brunneis, intùs albidis: subalaribus albis, angustè flavo limbatis.

Hab. in insulâ Celebensi.

Adult Male. Black with a deep blue gloss; entire crown metallic golden-green; least series of wing-coverts, lower back, upper tail-coverts, and the outer edges of the tail-feathers steel-blue, slightly tinted with violet; chin and throat metallic ruby lilac, with a well-defined greenish shaded steel-blue streak down each side; bill black; irides and legs dark brown. Total length 4.5 inches, culmen 0.7, wing 2.25, tail 1.6, tarsus 0.6.

Adult Female. Upper half of the head and the back of the neck ashy grey; back, scapulars, and the least series of wing-coverts olive; remainder of the wings dark brown, with all the feathers broadly edged with olive, which, on the quills, is of a more yellow shade; tail black, the feathers mostly tipped with white, most broadly so on the outer ones; chin and throat white; breast, abdomen, and under tail-coverts sulphur-yellow; under surface of the wings brown, with the inner margins of the quills and the coverts white, the latter partially washed with pale yellow. Total length 4.2 inches, culmen 0.65, wing 2.05, tail 1.4, tarsus 0.6.

Male in moult. Similar in plumage to the adult female, excepting that the metallic colours begin to show on the rump, upper tail-coverts, and tail, and on each side of the throat a well-defined metallic moustachial streak; the breast is much paler, the yellow fading almost into white on the sides of the body and on the under tail-coverts. Total length 4 inches, culmen 0.6, wing 2.25, tail 1.5, tarsus 0.6.

Hab. Celebes.

THIS Sun-bird is most nearly allied to another Celebean form (*C. grayi*), from which it differs in



CINNYRIS PORPHYROLÆMUS
CINNYRIS SANGIKENSIS

having the mantle and chest black instead of red. These two species may be readily distinguished from the other members of the "*Hermotimia*" group by the steel-blue moustachial line on each side of their metallic lilac throats.

This is by no means a common bird in collections; and, owing to the great resemblance between the members which constitute this group, there was much confusion until Count Salvadori, in his valuable paper upon the genus *Hermotimia* of Reichenbach (*l. c.*), ably pointed out their distinctive characters.

My descriptions of the adult male and of the male in moult are taken from Macassar specimens, the former from the type in the British Museum, collected by Mr. Wallace, the latter from one of Dr. Meyer's specimens.

The adult female I procured from a dealer out of a collection from Celebes. The measurements of the type, as well as of one of Dr. Meyer's specimens of an adult male from Macassar, are a trifle smaller than the one I have figured, which was collected by Dr. Meyer in the Togian Islands in the Gulf of Tomine and is now in the Marquis of Tweeddale's cabinet. In this specimen the wings measure 2.5 inches; but in the coloration of the plumage there is no difference.

The species has also been recorded by Count Salvadori from Kandari, on the south-west coast of Celebes, where Signor Beccari procured three males.

CINNYRIS AURICEPS.

(MOLUCCAN BLACK SUN-BIRD.)

Nectarinia auriceps, Gray, P. Z. S. 1860, p. 348; Wallace, P. Z. S. 1862, pp. 335, 343; Finsch, Neu-Guinea, p. 163 (1865).

Promerops auriceps, Gray, Hand-l. B. i. p. 110. no. 1357 (1869).

Chalcostetha auriceps, Walden, Ibis, 1870, p. 46; Meyer, Sitz. k. Ak. Wissensch. Wien, lxx. p. 123 (1874).

Hermotimia auriceps, Salvad. Atti R. Acc. Torino, x. pp. 208, 228 (1874); xii. p. 309 (1877).

Nectarinia porphyrolæma, Brügg. Abhandl. nat. Ver. Bremen, v. p. 73. no. 77 (1876).

♂ *ad.* niger, pileo summo virescenti-aureo: tectricibus alarum minimis et medianis, scapularibus, dorso postico, supracaudalibus et rectricum marginibus chalybeis plus minusve violaceo nitentibus: mento gulâque chalybeis dorso postico concoloribus.

♀ *ad.* pileo summo colloque cinerascenti-brunneis: dorso scapularibusque olivaceis: alis saturatè brunneis, pennis omnibus olivaceo marginatis: rectricibus nigris, albo terminatis, duabus centralibus haud apicatis, externis latius: mento gulâque albis: pectore, abdomine et subcaudalibus pallidè flavis.

♂ *juv.* similis feminae adultæ, sed pileo colloque postico olivaceo lavatis, mento gulâque pallidè flavis pectori concoloribus.

HAB. in insulis Moluccensibus "Gilolo," "Batchian," "Ternate," "Kaioa," "Tifore," "Sula," et "Celebes" dictis.

Adult Male. Black with a deep blue gloss; the entire crown metallic greenish gold; the least and median series of wing-coverts, scapulars, lower half of the back, and the upper tail-coverts steel-blue, more or less shaded with violet; in some specimens a few of the greater wing-coverts, and in all the tail-feathers, are broadly edged with steel-blue; chin and throat of the same shade of steel-blue as the lower back; bill and legs black; irides dark brown. Total length 4.5 inches, culmen 0.65, wing 2.4, tail 1.8, tarsus 0.6.

Adult Female. Upper part of the head and the back of the neck ashy brown; back and scapulars olive; wings brown, the feathers with broad olive edges, which on the quills have a slightly more yellow shade; tail black with white ends to all but the centre feathers, the white tips broadest on the outer ones; chin and throat white; breast, abdomen, and under tail-coverts pale yellow; under wing-coverts and inner margins of the quills white, the former slightly shaded with sulphur-yellow; bill and legs black; irides dark brown. Total length 4.1 inches, culmen 0.65, wing 2.1, tail 1.6, tarsus 0.55.

Young Male. Very similar to the adult female, but with the upper parts of the head and back of the neck shaded with olive, and the chin and throat pale yellow like the breast. The feathers of the abdomen are of a downy texture, indicative of youth. Total length 3.9 inches, culmen 0.6, wing 2.0, tail 1.4, tarsus 0.55.

Male in moult. Similar to the female, with the metallic portions beginning to show on the crown, upper tail-coverts, and the sides of the throat.

HAB. Moluccas: islands of Gilolo, Batchian, Ternate, Kaioa, Tifore, Sula Islands, and Celebes.



CINNYRIS AURICEPS.
CINNYRIS MOROTENSIS

C. auriceps may be readily recognized by the metallic portions of the throat, wings, scapulars, and lower back being of a deep violet-shaded steel-blue, and in the very golden green colour of the crown; in this latter respect it is similar to the Celebean *C. porphyrolæmus*, from which, however, it is distinguished by the colour of the throat and by having the median series of wing-coverts and the scapulars metallic like the lower back.

From the present species I have found it necessary to separate the Morty-Island bird, on account of its much greener crown, which is similar to that of *C. aspasix*, and from the metallic portions of the throat, wing-coverts, scapulars, and lower back being greenish, rather than violet-shaded steel-blue.

In the British Museum I have examined adult males from Ternate, Batchian, Kaioa, and Sula Islands, collected by Mr. Wallace; and they all are undoubtedly referable to this species. An adult male in the Marquis of Tweeddale's collection is labelled "Lombock? (*Wallace*)."² The only reason I can see for doubting the locality Lombock for this specimen is, that I cannot find the species mentioned from that locality in any of the numerous articles published upon Mr. Wallace's collections. I have not been able to examine fully adult specimens from Gilolo; but Count Salvadori (*l. c.*) assures me that they are perfectly similar; and it is also recorded from thence by Mr. Wallace (*l. c.*).

Dr. Brüggemann informs me that *C. auriceps* has been collected in Celebes by Dr. Fischer; and this does not appear to me to be at all surprising, as it has been found in the Sula Islands and Tifore. Though it would appear to be improbable, these specimens *may* possibly belong to my new species *C. morotensis*; for Count Salvadori remarks (*l. c.*) that in Count Turati's collection there is a specimen labelled Menado; but this locality he believes to be incorrect. It differs slightly from Gilolo specimens in having the metallic throat much less extended, the crown a little less golden and more green, the wing-coverts, scapulars, rump, and upper tail-coverts, as also the throat, deep steel-blue with a slight greenish reflection. He also examined a similar adult male specimen in the Turin Museum from an unknown locality, and observes that they probably come from a different place from that of the Gilolo bird, and may perhaps constitute a distinct species.

These specimens appear to belong to the same species as the Morty-Island bird; but in the type of that species I do not recognize any character in the shortness of the metallic portion of the throat.

The upper figure in the illustration represents an adult male of this species collected by Mr. Wallace in Batchian, from which specimen my description is also taken, while my lower figure represents the type of the closely allied *C. morotensis*.

The description of the adult female is taken from a Batchian specimen, and that of the young male from a bird from Ternate: both of these were collected by Mr. Wallace, and are in the British Museum.

† CINNYRIS MOROTENSIS.

(MORTY ISLAND BLACK SUN-BIRD.)

?*Hermotimia auriceps* (pt.), Salvad. Att. R. Ac. Tor. x. p. 229 (1874).

♂ ad. similis *C. auricipiti*, sed pileo aurato-viridi ut in *C. aspasie* colorato: ptilosi chalybeo-viridi nec violaceâ nitente distinguendus.

Hab. in insulâ Moluccensi "Morty" vel "Morotai" dictâ.

Adult Male. Differs from *C. auriceps* only in the much greener shade of the crown, which is of the same colour as in Dorey specimens of *C. aspasie*; the least and median series of wing-coverts, the scapulars, lower back, upper tail-coverts, and the edges of the tail-feathers are greenish-shaded steel-blue, with no lilac shade, excepting on some of the median series of wing-coverts, which are edged with lilac, and the edges of the tail-feathers, which are glossed with violet; the metallic throat is of a uniform deep greenish-shaded steel-blue like the lower back; bill and legs black; irides dark brown. Total length 4.5 inches, culmen 0.7, wing 2.4, tail 1.8, tarsus 0.6.

HAB. Morty Island.

THE type of this species, a fully adult male, was collected by Mr. Wallace in Morty Island, and is now in the British Museum. The specimen bears Mr. Wallace's own label; so that there is no doubt of its having come from the island of Morty, although in the numerous published records of his collections I have failed in finding any mention of a Sun-bird of this group having been obtained by him in that locality.

Like *C. auriceps* the present bird may be distinguished from all the other members of the "*Hermotimia*" group by its having the throat and lower back of the same shade of steel-blue. The characters which separate this bird from *C. auriceps* are the greener crown and the deep green instead of a violet shade to the steel-blue portions of the plume. These characters, if constant, as I suspect they will prove to be, are sufficiently well marked.

It appears to me probable that the specimens mentioned by Count Salvadori (*l. c.*), viz. one in Count Turati's collection and the adult male in the Turin Museum, may belong to this species.

CINNYRIS PROSERPINÆ

(BOURU BLACK SUN-BIRD.)

Nectarinia proserpina, Wallace, P. Z. S. 1863, p. 32; Finsch, Neu-Guinea, p. 163 (1865).*Promerops proserpina*, Gray, Hand-l. B. i. p. 110, no. 1358 (1869, err.).*Chalcostetha proserpina*, Walden, Ibis, 1870, p. 46; Meyer, Sitz. k. Ak. Wissensch. zu Wien, lxx. p. 123 (1874).*Hermotimia proserpina*, Salvad. Atti R. Acc. Torino, x. pp. 208, 230 (1874), xii. p. 307 (1877).

♂ *ad.* niger: pileo saturatè smaragdineo: tectricibus alarum minimis, dorso postico et supracaudalibus metallicè viridibus chalybeo nitentibus: scapularibus et tectricibus medianis nigris: caudâ nigrâ, rectricibus chalybeo marginatis: gulâ metallicè violaceâ chalybeo nitente, clariùs lateraliter.

♀ *ad.* pileo et collo postico cinerascens: dorso, scapularibus, supracaudalibus, remigum rectricumque marginibus olivascens-flavis: alis caudâque aliter saturatè brunneis: rectricibus quibusdam externis albo terminatis: mento gulâque pallidè cineraceis, pectore et subcaudalibus olivaceis, sulfureo lavatis.

HAB. in insulâ "Bouru" dictâ.

Adult Male. Black, with a deep blue gloss; crown deep metallic emerald-green with a bluish gloss; least series of wing-coverts, lower back, and upper tail-coverts metallic green, glossed with steel-blue; scapulars and median series of wing-coverts black, remainder of the wings brownish black; tail blue-black, the feathers edged with steel-blue; throat metallic violet, glossed with steel-blue, especially on the sides; bill and legs black; irides dark brown. Total length 5 inches, culmen 0.85, wing 2.5, tail 1.8, tarsus 0.65.

Adult Female. Upper half of the head and back of the neck ashy grey; back and upper tail-coverts and edges of the feathers of the wings and tail olive-yellow, remainder of the wings and tail dark brown; some of the outer tail-feathers with broad white ends; chin and throat pale ashy; breast and under tail-coverts olive-shaded yellow; under surface of the wings brown, with the inner margins of the quills and the coverts white, the latter tinted with yellow. Total length 4.3 inches, culmen 0.8, wing 2.2, tail 1.5, tarsus 0.6.

HAB. The island of Bouru.

THE black Sun-bird which we find in the island of Bouru belongs to that division of the "*Hermotimia*" group in which the metallic portions of the wings and lower back are green, and in which the scapulars and median series of wing-coverts are black. It differs from *C. nigroscapularis* and *C. salvadorii* by possessing a greater amount of metallic green on the wings, and in the somewhat different shade of the green of these parts and on the lower back.

It is a rare species in collections, which may probably be accounted for by its being limited in its range to the island of Bouru. I have only been able to examine four adult males and three females, all of which were collected by Mr. Wallace; in these I find the colouring and measurements are remarkably constant.

The specimens which I have here figured and described are in the Marquis of Tweeddale's collection.



CINNYRIS PROSERPINUS

CINNYRIS ASPASIOIDES.

(CERAM BLACK SUN-BIRD.)

Nectarinia aspasia, S. Müll. Naturl. Gesch. Land- en Volkenk. p. 110 (1843); S. Müll. & Schl. Verh. Nat. Gesch. Aves, p. 58 (1846, part.); Finsch, Neu-Guinea, p. 163 (1865, part.).

Nectarinia aspasioides, Gray, P. Z. S. 1860, p. 348; Pelz. Verh. k. k. zool.-bot. Gesellsch. in Wien, 1872, p. 427.

Cinnyris aspasia, Rosenb. J. f. O. 1864, p. 123 (part.).

Nectarinia aspasioides, Finsch, Neu-Guinea, p. 163 (1865).

Nectarinia amasia, Finsch, tom. cit. p. 163.

Promerops aspasioides, Gray, Hand-l. B. i. p. 110. no. 1356 (1869).

Chalcostetha aspasioides, Walden, Ibis, 1870, p. 46; Meyer, Sitz. k. Ak. Wissensch. zu Wien, lxx. p. 123 (1874).

Ptiloturus aspasioides, Gieb. Thes. Orn. i. p. 631 (1872).

Chalcostetha goramensis, Salvad. Ann. Mus. Civic. Genova, vi. p. 85 (1874).

Hermotimia aspasioides, Salvad. Atti R. Acc. Torino, x. pp. 208, 216 (1874), xii. p. 306 (1877).

♂ *ad.* similis *C. aspasiæ* sed major: culmine et caudâ longioribus, ptilosi brunnescentiore, pileo minus aureo et cyaneo adumbrato, tectricibus minimis et medianis, scapularibus, dorso postico, supracaudalibus et rectricum marginibus magis cyanescenti-viridibus, his partim purè chalybeis, tectricibus majoribus externis haud metallicè marginatis, gutture purè chalybeo haud lilacino lavato, distinguendus.

♀ similis feminæ *C. proserpinæ*, sed dorso olivaceo sordidiore et pectore pallidiore distinguenda.

HAB. in insulis Moluccensibus australibus.

Adult Male. Very similar to *C. aspasiæ*, but larger, especially in the measurements of the culmen and tail; the black portions of the plumage slightly browner; the crown less golden and shaded with blue; the least and median series of wing-coverts, the scapulars, lower back, upper tail-coverts, and margins of the tail-feathers of a bluer green, with a portion of the edges of the tail-feathers almost pure steel-blue; the outer greater wing-coverts with no metallic margins; the throat pure steel-blue with no lilac shade. Total length 4.5 inches, culmen 0.85, wing 2.4, tail 1.7, tarsus 0.6.

Adult Female. Similar in plumage to the female of *C. proserpinæ*, excepting that the olive on the back is duller and the breast whiter. Total length 4.35, culmen 0.75, wing 2.15, tail 1.55, tarsus 0.6.

HAB. Amboyna, Ceram, Goram, Matabello, and Banda?

THE Ceram Black Sun-bird is very similar to *C. aspasiæ*, the characters by which it is distinguished being very slight; but they are numerous, as I have shown in my description of the adult



CINNYRIS ASPASIOIDES
CINNYRIS ASPASLE

male of this bird, and are perfectly constant. Its most marked features are perhaps its larger size, as shown by the greater length of the culmen and tail, and the throat being pure steel-blue with no lilac shade.

In the British Museum I have compared specimens collected by Mr. Wallace from Ceram, Amboyna, Goram, and Matabello islands; and they all belong undoubtedly to this species; the culmen measured in all the five adult male specimens 0·85, and the tail from 1·7 to 1·9, while in seven fine specimens of *C. aspasia* I have found the measurements never greater than the following—culmen 0·7, tail 1·5.

The *Nectarinia aspasia* mentioned by S. Müller from Banda Island should, no doubt, belong to this species; but as I have not been able to examine a specimen from there, I have entered the locality as doubtful.

In the Marquis of Tweeddale's collection I have examined a typical specimen of this bird labelled "Aru Islands;" but as there is no indication on the label by whom it was collected, I think the locality must be wrong; for it appears to me impossible that a species like the present one, which is really barely more than a constant local variety, should be found so apparently out of its geographical district as the Aru Islands, when it appears to be absent, and replaced by an entirely distinct species (*C. theresia*) in the intervening Kei Islands. I have therefore taken no notice of this specimen in the range which I assign to the present species.

C. aspasioides is distinguished from *C. proserpinæ* by the scapulars and greater series of wing-coverts being metallic.

Mr. G. R. Gray, who first distinguished this bird from *C. aspasia*, nevertheless appears to have confounded it with *C. proserpinæ* in his 'Hand-list of Birds;' for he there gives the locality Bouru for this species, which would appear to have been taken from some specimen in the British Museum. But in that collection there are no specimens of any Sun-bird from Bouru except *C. proserpinæ*; I have therefore excluded that island from the range assigned to this species.

CINNYRIS ASPASIÆ

(NEW-GUINEA BLACK SUN-BIRD.)

Cinnyris aspasia, Less. Voy. Coq. Zool. i. p. 676. no. 100, pl. 30. fig. 4 (1826); id. Traité d'Orn. i. p. 295. no. 14 (1831); Bp. Consp. Av. i. p. 409 (1850); Bernst. J. f. O. 1859, p. 279; Rosenb. J. f. O. 1864, p. 123 (part.).

Cinnyris sericeus, Less. Dict. Sc. Nat. i. p. 21 (1827); id. Man. d'Orn. ii. p. 43 (1828).

Cinnyris aspasie, Less. Compl. Buff Ois. p. 590 (1838).

Nectarinia aspasia, Jard. Monogr. Sun-birds, pp. 219, 272 (1843); S. Müll. & Schl. Verh. Nat. Gesch. Aves, pp. 58, 64, 65 (1846, part.); Gray, Gen. B. i. p. 98. no. 44 (1847); Sclat. Journ. Linn. Soc. ii. p. 157 (1858); Gray, P. Z. S. 1858, p. 190 (part.); id. P. Z. S. 1859, p. 155; id. Cat. B. New Guinea, pp. 22, 55 (1859, part.); id. P. Z. S. 1861, p. 433 (part.); Finsch, Neu-Guinea, p. 163 (1865, part.).

Nectarinia amasia, S. Müll. Natuurl. Gesch. Land- en Volkenk. p. 22 (1843); Gray, P. Z. S. 1858, p. 190; id. Cat. B. New Guinea, p. 55 (1859); id. P. Z. S. 1861, p. 433; Finsch, Neu-Guinea, p. 163 (1865); Walden, Ibis, 1870, p. 50.

Chalcostetha aspasia, Cab. Mus. Hein. i. p. 103 (1850); Bp. Coll. Delattre, p. 57 (1854); Walden, Ibis, 1870, p. 45; Meyer, Sitzungsber. k. Akad. Wissensch. zu Wien, lxx. p. 122 (1874).

Hermotimia aspasia, Reichb. Handb. Scansoriæ, p. 285. no. 661, pl. 572. fig. 3901 (1853); Salvad. Atti R. Acc. Torino, x. p. 219 (1874); id. Ann. Mus. Civic. Genova, vii. pp. 400, 936 (1875); D'Albertis, Sydney Mail, 1877, p. 248; Salvad. Atti R. Acc. Torino, xii. p. 302 (1877).

Promerops aspasia, Gray, Hand-l. B. i. p. 110. no. 1355 (1869).

Promerops amasia, Gray, tom. cit. no. 1362.

Ptiloturus aspasia, Gieb. Thes. Orn. i. pp. 631, 695 (1872).

Chalcostetha chlorocephala, Salvad. Ann. Mus. Civic. Genova, vi. p. 78 (1874).

Hermotimia chlorocephala, Salvad. Atti R. Acc. Torino, x. pp. 208, 226 (1874); xii. p. 305 (1877).

Hermotimia, sp.?, Salvad. Ann. Mus. Civic. Genov. ix. pp. 30, 31. nos. 113, 114 (1876); id. Atti R. Acc. Torino, xii. p. 312 (1877).

♂ *ad.* niger indigotico adumbratus: pileo metallicè smaragdineo: tectricibus minimis et medianis, scapularibus, dorso postico et rectricum marginibus latè metallicè smaragdineis, vix chalybeo tinctis: tectricibus majoribus externis vix metallicè cyanescenti-viridi marginatis: mento gulâque chalybeis lilacino lavatis: rostro pedibusque nigris: iride saturatè brunneâ.

♀ *ad.* pileo colloque postico saturatè cinerascens, capite laterali pallidiore: dorso, scapularibus et supracaudalibus olivaceis: alarum plumis brunneis latè olivaceo marginatis, remigibus flavicanti lavatis: rectricibus nigris, vix olivaceo marginatis, exterioribus omnibus pallidiùs terminatis: gulâ albâ: corpore

reliquo subtùs pallidè flavo: subalaribus et remigibus intùs albis, margine carpali flavido; rostro et pedibus nigris: iride saturate brunneâ.

Hab. in insulis Papuanis.

Adult Male. Black, with a deep-blue gloss; entire crown metallic emerald green; least and median series of wing-coverts, scapulars, lower back, upper tail-coverts, and edges of the tail-feathers rich metallic green, barely tinged with blue; some of the outer greater wing-coverts partially edged with metallic bluish green; chin and throat lilac-shaded steel-blue; bill and legs black; irides dark brown. Total length 4.2 inches, culmen 0.65, wing 2.4, tail 1.5, tarsus 0.6.

Adult Female. Upper part of the head and back of the neck dark ashy grey; sides of the head paler; back, scapulars, and upper tail-coverts olive; wings brown, the feathers broadly edged with olive, which, on the quills, has a slightly yellower shade; tail black, the feathers partially margined with olive, and with pale ends to all but the centre ones; chin and throat ashy white; breast and under tail-coverts pale yellow, slightly tinted with olive; under wing-coverts and inner margins of the quills white, shaded with sulphur-yellow on the primary joint; bill and legs black; irides dark brown. Total length 4.1 inches, culmen 0.65, wing 2.1, tail 1.4, tarsus 0.6.

Male in moult. Similar in plumage to the female, but with a steel-blue streak down each side of the throat; upper tail-coverts mottled with metallic green; tail black, the feathers partially margined with metallic green.

HAB. Waigiou, Koffiao, Mysol, Salwattâ, Aru Islands, and New Guinea, and eastward to the Duke-of-York Island.

THE present species, the most widely spread of the "*Hermotimia*" group, belongs to that section of the Black Sun-birds in which the metallic portions of the lower back are green. It has the scapulars and median series of wing-coverts metallic, and may thus be distinguished from *C. proserpinæ*, *C. nigroscapularis*, and *C. salvadorii*. From *C. mafeorensis* it may be separated by the green instead of golden colour of the crown, and from *C. jobiensis* and *C. mysorensis* by the metallic portions of the wings and back being distinctly less shaded with steel-blue; and, moreover, it differs from the latter bird by the metallic throat not descending so far down towards the chest.

It appears to me that *C. aspasioides* is the nearest allied species; and it approaches so near to some specimens of this bird that it is not without some hesitation that I now keep them distinct. The characters by which *C. aspasioides* may be recognized from the present species are given in my article upon that bird, the most marked perhaps of them being the greater length of the culmen and tail, and the throat being pure steel-blue with no shade whatever of lilac.

Although I have recognized many nearly allied forms as distinct species, yet I cannot deny that the present one is still somewhat variable in the shade of colouring of the crown and throat.

It has been collected by Mr. Wallace in the islands of Waigiou and Mysol. From the former locality I have not been able to examine specimens; from the latter island there are in the British Museum several typically coloured specimens, as well as one which more nearly approaches *C. aspasioides* than any other example that I have yet seen; it has the throat only

very slightly tinted with lilac, of which, however, there is never a trace in *C. aspasioides*, and the measurements also show that it is referable to this species.

The specimens with the most golden shade on the crown were shown to me by Count Salvadori from the islands of Koffiao and Salvatti, and from Sorong, on the north-western peninsula of New Guinea. Those with the deepest green shade on the crown come from the Aru Islands, and were in consequence described as distinct by Count Salvadori under the title of *Chalcostetha chlorocephala*. I cannot, however, detect any specific distinction between the type specimen of *C. chlorocephala* and *Cinnyris aspasiæ*; for the crown has such a mere shade more greyish green that it is next to impossible to distinguish it from some specimens from the mainland of New Guinea, and the throat is metallic lilac, strongly shaded with blue on the sides, the metallic portions of the wings and back being perfectly identical with true *C. aspasiæ*. In the British Museum I have examined a specimen from the Aru Islands collected by Mr. Wallace, in which the crown is of a considerably more emerald green; and in this respect it differs more widely from the type of *C. chlorocephala* than that bird does from *C. aspasiæ*; and, further, it differs in having the entire throat uniform metallic lilac.

The shade of colouring of the metallic throat is not a constant character in *C. aspasiæ*; and I find this uniform lilac throat also present in the specimens I examined from Koffiao Island. Thus we find a specimen from Koffiao agreeing perfectly, as regards this character, with a specimen from the Aru Islands; but those very two examples are the ones which differ most in the colouring of their crowns. I have come to the conclusion that neither the colour of the crown nor that of the throat are perfectly constant in this species, and that the crown may vary from golden green to emerald-green, and the throat may vary from steel-blue, only slightly shaded with lilac, to pure lilac.

The bluer-throated specimens appear generally to be found on the mainland of New Guinea and on the Duke-of-York Island, the latter a locality from whence Mr. Sclater has recently received an adult male and female and a young male. According to Count Salvadori (Att. R. Acc. Torino, xii. p. 303), these specimens from the Duke-of-York Island should not be referred to *C. aspasiæ*; for, he observes, the male does not agree exactly with any of the numerous specimens examined by him of this species. I myself have also compared it with Dorey specimens and can find no distinctive characters whatever in the plumage or measurements of the adult male. The female and young male are certainly rather bright on the underparts, but differ in no other respect from similar specimens of *C. aspasiæ*. The most that in my opinion can be said with regard to these specimens is that they may belong to a race in which the plumage of the female and young bird is possibly constantly paler and brighter than in the typical Dorey race. Under any circumstances its distinctive characters are not so well marked as in many of the races of Indian Sun-birds, such as *C. intermedius* and *C. brevirostris*, which I refer to races of *C. asiaticus*, or the Indian and Ceylon races of *C. zeylonicus* and *C. lotenius*, which have never yet been separated.

In the above article Count Salvadori further gives some interesting notes upon the plumages of sixteen specimens from Dorey, Mansinam, Krudu, Sorong, Salvatti, and Koffiao, and remarks that the bird collected by D'Albertis at Naiabui, on the Fly River, is referred by that gentleman ('The Sydney Mail,' 1877, p. 248) to *C. aspasiæ*. Count Salvadori, however, still retains that

specimen (p. 312) as distinct, but does not give it a name. It is labelled male, but is in a dress similar to that of the female; and its only known specific character lies in the bill being wider at the base than in any other species of this group yet described.

Besides the localities above mentioned, *C. aspasiæ* has been collected by Dr. Meyer at Andai (foot of Arfak Mountains), at Nappan, and at Rubi (coast of Geelvink Bay); and by Müller at Lobo.

Of the localities wrongly assigned to this bird we have Macassar and Banda Island (*S. Müller*). Undoubtedly the specimens collected in the former locality should be referred to *C. porphyrolæmus*; and those collected by him in the latter island probably belong to the Ceram form (*C. aspasioides*). The specimens mentioned by Von Rosenberg from the Kei Islands should no doubt belong, as Count Salvadori has already remarked, to *C. theresiæ*.

Very little has ever been written upon the habits of this species. Lesson mentions it as frequenting the woods which surround the Port of Dorey, where he collected the type specimens; and S. Müller tells us that he found it in habits to be very similar to *Chalcostetha insignis*, frequenting the coast in the vicinity of streams and marshes, constantly flitting among the aquatic shrubs and plants, where, although active in its habits, it was not shy.

A nest collected by Von Rosenberg in the vicinity of Dorey contained two eggs, and has been described by Bernstein as similar to that of *Chalcostetha insignis*, about 6 inches in length, of an oval form, widening below, and suspended by a narrow thread from the extremity of a twig. It was constructed of leaves, fibres, and bark interwoven with spider's web and caterpillar-silk, by which it was attached to the overhanging bough, and was prevented from slipping off by the two end leaves being thus secured and interwoven into the sides of the nest. The entrance to the nest was an oval hole at one side. The eggs were transparent white, with a few small black spots towards the thick end only.

Count Salvadori (*Atti R. Acc. Tor.* x. p. 223) points out very clearly that the name *Nectarinia amasia* was a *lapsus calami* of Müller, or was a printer's error, *amasia* being printed instead of *aspasia*; for in the index we find *N. aspasia* cited for page 22, and the name is not found in Müller and Schlegel's later work.

In Mr. Godman's collection I have seen two specimens of *C. aspasiæ* labelled Cape York, on the authority of Mr. Cockerell; and doubting the correctness of the locality, I wrote to Mr. Ramsay, in Australia, upon the subject, who kindly writes:—"With regard to *C. aspasiæ* Mr. Thorpe, who skinned the whole, and collected the greater part, of the birds obtained by Thorpe and Cockerell at Cape York, assures me that no other Sun-bird, except *C. frenatus* (*N. australis*, Gould), was obtained there by them. Cockerell, sen., on his way from the Aru Islands to Brisbane, called in at Cape York; and I examined the whole of his collection at Brisbane on his return. He showed me many wonderful species said to have been shot at Cape York, amongst others *Henicoperius longicauda*, *Ardea heliosylos*, and *Cinnyris aspasiæ*. These two latter he made Mr. Diggles believe he got there; and they were accordingly figured by him as new Australian birds. Mr. James Cockerell, who accompanied his father to the Aru Islands, informs me that *C. aspasiæ* was not shot at Cape York."

CINNYRIS SOLARIS.

(ORANGE-BREADED SUN-BIRD.)

Nectarinia solaris, Temm. Pl. Col. pl. 347, fig. 3 (1825); Jard. Monogr. Sun-birds, pp. 215, 266 (1842); S. Müll. & Schl. Verh. Nat. Gesch. Aves, p. 60, pl. 8, fig. 5 (1846); Gray, Gen. B. i, p. 98 (1847); Schl. Handl. Dierk. p. 256 (1857); Wallace, P. Z. S. 1863, p. 486; Finsch, Neu-Guinea, p. 163 (1865).

Cinnyris solaris, Less. Man. d'Orn. ii, p. 31 (1828); id. Traité d'Orn. i, p. 297, no. 25 (1831); Blyth, Cat. B. Mus. A. S. B. pp. 225, 228, no. 1365 (1849); Bp. Consp. Av. i, p. 408, no. 42 (1850); Wallace, Ibis, 1861, p. 350.

Anthreptes solaris, Licht. Nomencl. Av. p. 56 (1854).

Cyrtostomus solaris, Reichb. Handb. Scansoriæ, p. 308, no. 725, pl. 589, figs. 3995-96 (1854); Bp. Comptes Rendus, 1854, p. 265.

Arachnothera solaris, Gray, Hand-l. B. i, p. 112, no. 1386 (1869).

Arachnechthra solaris, Walden, Ibis, 1870, p. 32.

♂ *ad.* suprâ sordidè olivaceo-flavus, uropygio et supracaudalibus lætiùs flavis: tectricibus alarum minimis dorso concoloribus, reliquis brunneis dorsi colore limbatis: remigibus brunneis angustè lætiore flavo marginatis: rectricibus nigris, sub certâ luce indistinctè translineatis, exterioribus versùs apicem pallidioribus et angustè albo terminatis: vertice, loris, genis et gutturi lateribus metallicè viridibus chalybeo nitentibus: gutture medio olivascenti-bronzino, fasciâ transversali jugulari metallicè violacèa: corpore reliquo subtùs miniato, crisso et subcaudalibus magis aurantiacis: corporis lateribus olivascenti-flavis, fasciis pectoralibus lætè flavis: subalaribus albis vix flavo lavatis: remigibus subtùs brunneis, angustè albo intùs marginatis: rostro nigro: pedibus et iridè saturatè brunneis.

♀ *ad.* a mare diversa: suprâ olivascenti-flava: remigibus et rectricibus ut in mare coloratis, his lætè albo terminatis: facie laterali olivascente, supercilio parvo flavo: genis et regione paroticâ inferiore flavis: subtùs flava, gulâ vix pallidiore.

Hab. in insulis "Timor" et "Flores" dictis.

Adult Male. Upper parts olive-yellow; forehead and crown deep metallic green, often shaded with violet-bronze; wings dark brown, the feathers broadly edged with olive-yellow; tail black, tipped with white, broadest on the outer feathers; in front of the eyes black; cheeks, lower portion of the ear-coverts, and an eyebrow metallic green; remainder of the sides of the head and neck olive-yellow; chin and throat deep metallic green, with a more or less well-defined broad violet-bronze band down the centre; breast orange-red, darkest on the chest, and fading into orange-yellow on the abdomen and under tail-coverts; flanks and thighs shaded with olive; pectoral tufts bright sulphur-yellow; under surface of the wings brown, with the inner margins of the quills and the coverts white, the latter partially shaded with sulphur-yellow; bill black; irides and legs dark brown. Total length 4.2 inches, culmen 0.75, wing 2.1, tail 1.5, tarsus 0.6.

Adult Female. Upper parts olive-yellow; wings and tail as in the adult male; sides of the head olive-



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yellow, with an eyebrow, cheeks, and lower portion of the ear-coverts pale-yellow; entire underparts yellow; under surface of the wings brown, with the inner margins of the quills and the coverts white, the latter partially shaded with yellow. Length 4 inches, culmen 0.75, wing 1.95, tail 1.4, tarsus 0.55.

HAB. Flores and Timor.

THE Orange-breasted Sun-bird belongs to the "Cyrtostomus" group. The male is readily distinguished by the orange-red colour of the breast; the female, however, possesses a yellow breast, and is not so easily recognized from the other closely allied species; the bill is, perhaps, the best-marked character, being longer than in *C. pectoralis*, the only closely allied form found within the limits of its range.

Temminck, who first described this species, gave the locality Amboyna for his type specimen; but this was evidently an error, as S. Müller has already pointed out. Mr. G. R. Gray, again (*P. Z. S.* 1860, p. 348), refers to Amboyna as a habitat, but was evidently copying Temminck.

It has been recorded by S. Müller from Timor, Poeloe, and Samao. From Timor and Flores I have examined several specimens collected by Mr. Wallace; and in the former of these islands it is the only species of Sun-bird at present known, while in the latter are also to be found *C. pectoralis* and *Anthreptes malaccensis*.

It is a rather rare bird in collections; and nothing has, as yet, been recorded respecting its habits.

The specimens here figured and described are an adult male and female collected by Mr. Wallace in the island of Flores, and now in my own possession.

CINNYRIS ZENOBIA.

(BLACK-BREASTED OLIVE-BACKED SUN-BIRD.)

- ? *Tufted Creeper*, Lath. Syn. Suppl. p. 132, no. 57 (1787); id. Gen. Hist. B. iv, p. 251, no. 46 (1822).
- ? *Certhia cirrhata*, Lath. Ind. Orn. i, p. 299, no. 62 (1790); Shaw, Gen. Zool. viii, p. 271 (1811); Bechst. Kurze Uebers. p. 189, no. 63 (1812).
- ? *Souï-manga à touffes jaunes*, Aud. et Vieill. Ois. Dor. ii, p. 65 (1802).
- ? *Cinnyris cirrhatus*, Vieill. N. Dict. d'Hist. Nat. xxxi, p. 495 (1819); Bonn. et Vieill. Enc. Méth. ii, p. 599 (1823); Less. Man. d'Orn. ii, p. 29 (1828).
- Cinnyris zenobia*, Less. Voy. Coq. Zool. i, p. 670, no. 104, pl. 30, fig. 3 (1826); Bp. Consp. Av. i, p. 409, no. 50 (1850); Rosenb. J. f. O. 1864, p. 193, part.
- Cinnyris clementiæ*, Less. Dict. Sc. Nat. i, p. 18 (1827); id. Man. d'Orn. ii, p. 40 (1828).
- ? *Nectarinia cirrhata*, Drapiez, Dict. Class. xv, p. 509 (1829).
- Nectarinia clementiæ*, Drapiez, tom. cit. p. 510.
- Nectarinia zenobia*, Jard. Monogr. Sun-birds, p. 272 (1842); S. Müll. & Schl. Verhand. Zool. Aves, p. 60 (1846); Gray, Gen. B. i, p. 98 (1847); id. P. Z. S. 1858, p. 173, 1860, p. 348, part., 1861, p. 433, part.; Wallace, P. Z. S. 1863, p. 32; Finsch, Neu-Guinea, p. 163 (1865, part.).
- Chalcostetha zenobia*, Reichb. Handb. Scansoriæ, p. 286, no. 663, pl. 572, fig. 3900 (1854).
- ? *Nectarinia solaris*, Gray, P. Z. S. 1860, p. 348.
- Arachnothera zenobia*, Gray, Hand-l. B. i, p. 110, no. 1361 (1869).
- Arachnechthra zenobia*, Walden, Ibis, 1870, p. 30.
- Cyrtostomus zenobia*, Salvad. Ann. Mus. Civic. Genova, viii, p. 379 (1876); id. Atti R. Acc. Torino, xii, p. 319 (1877).

♂ *ad.* suprâ olivascenti-flavus: tectricibus alarum brunneis, extûs olivascenti-flavo marginatis: reetricibus nigris, angustè metallicè viridi limbatis, exterioribus albido terminatis: gutture toto et præpectore metallicè violaceis, vittâ latâ mystacali viridescenti-chalybeâ ad latera juguli productâ: corpore reliquo subtûs velutino-nigro violaceo lavato: fasciis pectoralibus lætè flavis: subalaribus et remigibus infrâ brunneis, his intûs albido vel pallidiore brunneo marginatis: rostro et pedibus nigris: iride saturatè brunneâ.

♀ *ad.* mari dissimilis, haud metallica: suprâ olivascenti-flava: alis saturatè brunneis, plumis dorsi colore limbatis: reetricibus nigris, exterioribus albo terminatis: vittâ superciliari flavidâ: plumis anteocularibus et regione paroticâ saturatè brunneis: corpore subtûs flavo, gulâ pallidiore.

Hab. in insulis Moluccanis.

Adult Male. Upper parts olive-yellow; wings dark brown, the least and median series of coverts olive-yellow like the back, and the remainder of the feathers edged with that colour; tail black, the feathers



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narrowly edged with a deep metallic gloss, and with very narrow pale tips to the three outer ones on each side; underparts black, with a blue gloss; chin, throat, and front of the chest metallic violet, shading on the sides of the throat into deep metallic green; pectoral tufts bright golden-yellow; under surface of the wings dark brown, with the inner margins of the quills white; bill and legs black; irides dark brown. Total length 4.3 inches, culmen 0.75, wing 2.1, tail 1.5, tarsus 0.6.

Adult Female. Upper parts olive-yellow; a broad buff eyebrow; wings dark brown, with the least and median series of coverts olive-yellow like the back, and the remainder of the feathers edged with that colour; tail black, tipped with white, most broadly so towards the outer feathers; underparts yellow, fading almost into white on the chin; flanks slightly shaded with olive; under surface of the wings brown with the inner margins of the quills and the coverts white, the latter slightly shaded with yellow; bill and legs black; irides dark brown. Length 3.75 inches, culmen 0.7, wing 1.85, tail 1.2, tarsus 0.55.

HAB. Bouru, Amboyna, Ceram, and the Kei Islands.

THE present species belongs to the "*Cyrtostomus*" group. It may be at once recognized from all the other Sun-birds by the olive-yellow colouring of the upper parts, combined with a black breast and bright yellow pectoral tufts.

It has been collected by Mr. Wallace in Bouru, Amboyna, Ceram, and the Kei Islands. It is recorded from Dorey, in New Guinea, and from Gilolo upon the same authority by Mr. G. R. Gray (P. Z. S. 1859, p. 155, 1860, p. 348); but I much doubt these localities for *C. zenobia*, and suspect that the specimens were females, and should be referred to *C. frenatus*.

The Marquis of Tweeddale observes (Ibis, 1870, p. 30):—"A specimen in my possession, obtained from a large collection of birds from Queensland, and consisting of authenticated Queensland species, represents a form exactly similar to Ceram examples of *A. zenobia* (Less.), excepting that it is smaller in its principal dimensions, and that it possesses a steel-blue frontal patch. Thus this alleged Queensland bird bears to *A. zenobia* the same relation that *A. pectoralis* (Horsf.) does to *A. frenata* (S. Müll.). Can it be the one mentioned by Mr. Ramsay as *Nectarinia australis* (Ibis, 1865, p. 85, no. 32)?"

I have written to Mr. Ramsay upon this subject; and he replies:—"With the exception of *C. frenatus*, I know of no other Australian Sun-bird. *C. frenatus* is found as far south as Port Denison, from whence I have received specimens, and also the nest mentioned (Ibis, 1865, p. 85). It is found also in the Rockingham-Bay district, and on the Daintree and Johnstone rivers to the north of Cardwell. I have before me specimens from Cape York, Port Moresby, New Guinea, the Duke-of-York Island, and New Ireland, in none of which do I observe any material difference. I certainly would not admit either *C. aspasie* or *C. zenobia* into the Australian fauna, unless from some undoubtedly good authority; for, as a rule, I find collections of birds from Queensland most untrustworthy."

The specimen of *C. zenobia*, nominally from Queensland, is in full adult plumage, and is said to have been collected by Mr. Thorpe. The forehead is slightly shaded with metallic violet, the tips of some of the feathers being of that colour, thus differing from typical examples of *C. zenobia* in exactly the same proportion as some Penang specimens of *C. flammavillaris* do from Moulmein birds of that species; and varieties of a similar character are not uncommon with *C. jugularis*.

In one of Count Salvadori's articles upon the Sun-birds of the Papuan region (Atti R. Acc. Torino, xii, p. 320), he writes:—"Due maschi, forse più adulti degli altri, uno di Buru ed un altro delle Isole Kei, hanno il pileo tinto di nerastro splendente."

He further remarks that he has examined twenty-seven specimens from Bouru collected by Bruijn and Beccari, thirteen from Amboyna, one from Ceram Lant, and six from the Kei Islands. He suggests that probably Wallace's *Cinnyris*, n. sp. (Ann. & Mag. Nat. Hist. ser. 2, xx, p. 473), collected in the Kei Islands, should be referred to this species, while the *Nectarinia zenobia*, Gray (P. Z. S. 1859, p. 155), from Dorey should be referred to *C. frenatus*, to which species sixty specimens collected by D'Albertis, Beccari, and Bruijn all belong. For a similar reason he believes that the locality Aru Islands, mentioned by Von Rosenberg (J. f. O. 1864, p. 123), is likewise incorrect, as all the specimens collected there by Beccari belong to *C. frenatus*. He further observes that *C. zenobia* and *C. frenatus* apparently are not found on the same islands. In my article upon *C. frenatus* I mention by error the locality Ceram for that species on the faith of the specimen which I have here figured and described as the adult female of this species, now in the Marquis of Tweeddale's magnificent collection. The adult male here figured and described was also collected in Ceram by Mr. Wallace, and is in my own cabinet.

Lesson's type came from Amboyna, where it was killed in the mountains of Soya; and in this island, according to S. Müller, it is not uncommon among the farm inclosures and sparsely covered hills.

The description of *Certhia cirrhata*, Lath. (Ind. Orn. i. p. 299), agrees well with this species. That description was taken from his "Tufted Creeper," which was described from one of Lady Impey's drawings, said to have the "head, neck, and back deep olive, the feathers edged with dusky, primary quills brown, belly and tail black, on each side of the breast a tuft of yellow feathers, legs black. Inhabits Bengal."

It would appear from the description that the throat of the "Tufted Creeper" was olive, which is not the case with any known Black-breasted Sun-bird; and I think it therefore probable that this part was either hidden in the figure or that it was overlooked in the description. The locality, Bengal, is certainly an error; for undoubtedly it should not be referred to *C. asiaticus*, as that bird always loses the black breast in its moult before it assumes the dull plumage on the back, and, besides, the yellow pectoral tufts always disappear in the moult, before the back becomes olive.

The name, however, appears to be of little real importance, as the description is inaccurate if intended for this species, and therefore should not, in my opinion, be used.

An immature male of this species in the Paris Museum, collected during the voyage of the 'Astrolabe,' is labelled *C. melanogaster*. It differs from the adult in the breast and abdomen being yellow mottled all over with black feathers.

ANTHREPTES MALACCENSIS.

(MALACCAN BROWN-THROATED SUN-BIRD.)

- Le Grimpereau de Malacca*, Sonn. Voy. Ind. ii, p. 209, pl. 116, fig. 1 (1782).
Certhia malaccensis, Scop. Del. Flor. et Faun. Insubr. ii, p. 91, no. 62 (1786, ex Sonn.).
Yellow-bellied Creeper, Lath. Syn. Suppl. p. 131, no. 54 (1787); id. Gen. Hist. B. iv, p. 229, no. 18 (1822).
Certhia lepida, Lath. Ind. Orn. i, p. 298, no. 60 (1790); Shaw, Gen. Zool. viii, p. 213 (1811); Bechst. Kurze Uebers. p. 189, no. 61 (1812).
Le Soui-manga de Malacca, Aud. et Vieill. Ois. Dor. ii, p. 63 (1802).
Nectarinia javanica, Horsf. Tr. Linn. Soc. xiii, p. 167 (1820); Motl. & Dill. Contr. Nat. Hist. Labuan, p. 16 (1855).
Certhia javanica, Raffl. Tr. Linn. Soc. xiii, p. 299 (1822).
Javan Creeper, Lath. Gen. Hist. B. iv, p. 265, no. 74 (1822).
Cinnyris javanicus, Swains. Zool. Ill. ser. 1, iii, p. 121 (1822-23); Vig. Mem. Raffl. p. 673 (1830); Eyton, P. Z. S. 1839, p. 101.
Cinnyris lepidus, Vieill. Enc. Méth. ii, p. 592 (1823); Vieill. Gal. Ois. i, p. 291, pl. 177 (1825); Less. Man. d'Orn. ii, pp. 33, 58 (1828); id. Traité d'Orn. i, p. 298, no. 30 (1831).
Cinnyris ruficollis, Vieill. Enc. Méth. ii, p. 600 (1823).
Nectarinia lepida, Temm. Pl. Col. 126, figs. 1, 2 (1823); Müll. & Schl. Verh. Natuurl. Gesch. p. 63, no. 13 (1846, pt.); Low, Sarawak, p. 410 (1848); Finsch, Neu-Guinea, p. 163 (1865, pt.).
Anthreptes javanica, Swains. Class. B. ii, p. 329, fig. 288 f (1837).
Nectarinia malaccensis, Blyth, J. A. S. B. xii, p. 980 (1843); Gray, Gen. B. i, p. 99, no. 95 (1847); Pelz. Novara-Reis. Vög. pp. 52, 161 (1865).
Anthreptes lepida, Bp. Consp. Av. i, p. 409, no. 1 (1850); Licht. Nomencl. Av. p. 55 (1854); Wallace, P. Z. S. 1862, p. 343 (pt.); Sclat. P. Z. S. 1863, p. 220; Wallace, tom. cit. p. 486; ?Schomburgk, Ibis, 1864, p. 248.
Anthothreptes malaccensis, Cab. Mus. Hein. i, p. 104 (1850); Blyth & Walden, Cat. Mamm. and Birds Burma, p. 142, no. 496 (1875); Walden, Ibis, 1876, p. 348.
Anthreptes malaccensis, Reichb. Handb. Scansoriae, p. 305, no. 714, pl. 588, figs. 3989-91 (1854); Horsf. & Moore, Cat. B. E.I. Co. Mus. ii, p. 737 (1856); Gould, P. Z. S. 1859, p. 151; Moore, tom. cit. p. 461 (pt.); Walden, Ibis, 1870, p. 47 (pt.); id. Tr. Zool. Soc. viii, p. 70 (1871, pt.); Salvad. Ann. Mus. Civic. Genova, v, p. 178 (1874, pt.); Hume, Str. F. 1874, p. 473; Sharpe, P. Z. S. 1875, p. 107; Brügg. Abhandl. nat. Vereine zu Bremen, v, pp. 72, 458 (1876); Sharpe, Ibis, 1876, p. 42; id. Ibis, 1877, p. 18; Tweeddale, tom. cit. p. 302; Sharpe, Tr. Linn. Soc. 2nd series, Zool. i, p. 342 (1877).
Arachnothera malaccensis, Gray, Hand-l. B. i, p. 113, no. 1396 (1869).
Nectarophila malaccensis, Stoliczka, J. A. S. B. xxxix, p. 301, no. 39 (1870); Walden, Ibis, 1871, p. 167.



ANTHREPTES MALACCENSIS

♂ *ad.* suprâ lilacino-bronzinus, capite colloque viridi adumbratis: dorso postico, uropygio, supracaudalibus, et tectricibus alarum minimis lætè metallicè violaceis: tectricibus medianis, majorum marginibus et scapularibus quibusdam rubescenti-brunneis: alâ reliquâ saturatè brunneâ, pennis olivascenti-flavo limbatis: reetricibus nigris, metallicè violaceo et viridi marginatis: capitis lateribus olivascenti-brunneis: subtùs lætè flavus: mento gulâque chokolatinis cano adumbratis, et utrinque strigâ metallicè violacè et viridi marginatis: alâ subtùs brunneâ, remigibus intùs pallidè marginatis: subalaribus albis, flavo lavatis.

♀ *ad.* suprâ olivaceo-viridis: alis caudâque saturatè brunneis, pennis olivascenti-flavo marginatis: subtùs flava, versus mentum pallidior, gutture et corporis lateribus vix olivaceo lavatis.

Hab. in regione Indo-Chinensi, in peninsulâ Malayana, et in insulis Malayanis.

Adult Male. Upper parts lilac-bronze, shaded with green on the head and neck; lower back, upper tail-coverts, and the lesser wing-coverts rich metallic violet; median series of wing-coverts, edges of the greater coverts, and a portion of the scapulars maroon-brown; remainder of the wings dark brown with olive edges to the feathers; tail black, the feathers edged with metallic violet and green; sides of the head olive-brown; underparts rich yellow, with the yellow pectoral tufts barely distinguishable; chin and throat chocolate-brown with a white gloss, and margined on each side by a loreal band of metallic violet mottled with green towards its junction with the metallic green on the sides of the neck; under surface of the wings brown with narrow pale margins to the inner webs of the quills; the coverts white shaded with yellow; bill dark brown; irides red; legs yellowish green. Total length 5 inches, culmen 0.65, wing 2.6, tail 1.8, tarsus 0.65.

Adult Female. Upper parts olive-green; wings and tail dark brown, the feathers edged with olive-yellow; underparts yellow, palest towards the chin, and slightly shaded with olive on the throat and sides of the body. Total length 4.5 inches, culmen 0.6, wing 2.5, tail 1.8, tarsus 0.65.

HAB. Arracan, Southern Burmah, Siam, Cambodia, the Malay peninsula, and the island of Penang; Sumatra, Java, Madura, Flores, Borneo, Labuan, and Palawan.

WITH a very large series before me, I have come to the conclusion that *A. malaccensis* should be kept separate from four other very closely allied species, two of which I shall describe as new.

The characters which distinguish the present species from the other closely allied forms are as follows:—The breast is bright yellow in both sexes and at all ages. In the adult male the sides of the head are olive-brown, the throat chocolate-brown glossed with white, a large portion of the greater series of wing-coverts and the scapulars maroon-brown. In the young males the throat is mottled with bright yellow and often with orange, excepting in three specimens which I have examined from Flores, in which the throat is mottled with white; but adult males from that island agree perfectly with specimens from Malacca and Borneo.

I have examined a female from Cambodia, and adult males from all the localities above enumerated.

Messrs. Hume and Davison write to me:—"Akiab, in Arracan, whence we have recently received specimens, is, so far as we yet know, the most northern limit attained by this species. We have not received it from Pegu; nor have we observed it in any part of Tenasserim north of Moulmein. In fact our first specimens were obtained at Amherst; thence southward, until Mergui is reached, the species must be accounted rare. Southward of Mergui, along the

western coast of the Malay peninsula to its extremity at Singapore, it is one of the most, if not actually *the* most common of all the Sun-birds, occurring in numbers in every garden and cocoa-nut plantation, amongst the mangroves that fringe the shores, and wherever flowers are to be seen. It seems to shun only the denser portions of the forests and the dense scrub jungle.

“Both this species and *A. hypogrammica*, which is a true *Anthreptes* in all its habits, differ somewhat from the more typical Sun-birds, in feeding more largely on insects and less upon honey, and in making greater use of their feet and less of their wings when moving about among the flowers and foliage.

“The male of this species occasionally utters a feeble song, if its few twittering notes are to be dignified by this appellation; but it is very distinctly more of a song than the chirruping of the *Ethopygæ*.

“This species has no non-breeding plumage; this we can pretty confidently assert, having obtained it at all seasons.

“*Male*. Length 5·12 to 5·4 inches, expanse 8·12 to 8·62, tail 1·75 to 2·0, wing 2·5 to 2·75, tarsus 0·62 to 0·65, bill from gape 0·75 to 0·8, weight 0·4 to 0·5 ounce.

“*Female*. Length 4·75 to 5·12 inches, expanse 7·7 to 8·12, tail 1·5 to 1·75, wing 2·37 to 2·5, tarsus 0·55 to 0·62, bill from gape 0·7 to 0·8.

“The colours of the soft parts are variable. The legs and feet are generally dark sap-green, with the feet slightly paler, and the soles light yellowish green; but the feet have sometimes a yellowish tinge, and are sometimes orange, barely tinted with green, and with the soles a clear orange; the claws are generally green. The bill is dark horny brown, in some nearly black; the gape is orange. The irides vary most of all, equally in both sexes, and in birds killed at the same season, from bright red to dark brown. Neither does this appear to be due to age, as we have some clearly adult, full-plumaged, males with light-red irides.”

The description given by Sir R. Schomburgk of his *Anthreptes lepida* from Siam is not to be recognized as belonging to this or any other known species of Sun-bird; yet, according to Mr. Gould, he did obtain *A. malaccensis* in Siam, and I have seen an adult male from that locality in Mr. Swinhoe's collection; and from Cambodia I have examined a female in the Marquis of Tweeddale's cabinet.

It appears to be absent in Pegu; for Mr. Oates omits it in a list of the Sun-birds of that district which he has kindly sent me. Dr. Cantor collected it in Penang, where it has also been procured by Mr. Swinhoe.

Dr. Horsfield (Trans. Linn. Soc. xiii. p. 167) describes this species under the title of *Nectarinia javanica*, from Javan specimens; and Sir S. Raffles (*l. c.* p. 299) refers the Sumatra bird to the same species. The only specimen which I know of from the island of Madura was collected there by Dr. Meyer in November 1871, and is now in the possession of the Marquis of Tweeddale. It differs slightly from typical *A. malaccensis* in the almost entire absence of maroon-brown on the greater wing-coverts and scapulars, and in the blue shade being more intense in the metallic colouring of the wings and lower back; it is also slightly more robust (culmen 0·65 inch, wing 2·55, tail 1·9, tarsus 0·65), but is not, I consider, separable as a species from *A. malaccensis*.

This specimen is figured, with the wings extended, in the same illustration with *A. rhodolæma*;

and the Plate represents the two most extreme forms of the Malayan *Anthreptes* or Brown-throated Sun-birds.

In the island of Flores, which appears to be the extreme south-eastern range of this species, it has been collected by Mr. Wallace.

In Borneo it is very abundant, ranging apparently all over the island. According to Mr. Motley it is not rare about Banjermassing. It is recorded by Count Salvadori from Sarawak, in the collections of Doria and Beccari, and has been collected by Mr. Everett at Sibü. Mr. Low and Governor Ussher have sent home a large number from the north-west coast, opposite Labuan.

Messrs. Motley and Dillwyn write (Nat. Hist. Labuan, p. 16):—"We have seen this bird at the south end of Labuan; its movements, as we have also observed in other species of this genus, much resemble those of English Titmice."

The Bornean avifauna seems to extend to the island of Palawan, in the Philippines; so that we are not surprised to find that the specimens of *Anthreptes* collected by Dr. Steere in that island belong to the present species, and not to the *A. chlorigastrea*, which he met with in Negros.

The nest of this bird is oval in form, with a hole at one side near the top. It is rather loosely constructed of cocoanut-fibres, shreds of bark, and a few dead leaves, which bind together the white silk-like down of some plant-seeds, giving consistency to the structure, but not specially forming the lining. Length, exclusive of some of the loose pendent shreds, 4·5 inches, breadth 3. The nest here figured and described, and several others of this species in the British Museum, are all similar in structure, and in like manner suspended from twigs. They were collected by Mr. Low in North-western Borneo, whence also came the specimens here described and figured.

+ ANTHREPTES CELEBENSIS.

(CELEBES BROWN-THROATED SUN-BIRD.)

Nectarinia lepida, pt., Müll. & Schl. Verh. Natuurl. Gesch. p. 63, no. 13 (1846); Finsch, Neu-Guinea, p. 163 (1865, pt.).

Anthreptes malaccensis, pt., Moore, P. Z. S. 1859, p. 461; Walden, Ibis, 1870, p. 47; id. Trans. Zool. Soc. viii, p. 70 (1871); Salvad. Ann. Mus. Civic. Genova, v, p. 178 (1874); Brügg. Abhandl. nat. Vereine zu, Bremen, v, p. 72, no. 76 (1876).

Anthreptes lepida, Wallace, P. Z. S. 1862, pp. 335, 343.

Anthothreptes malaccensis, pt., Salvad. Ann. Mus. Civic. Genova, vii, p. 661 (1875); id. Atti R. Acc. Tor. xii, p. 320 (1877).

♂ similis *A. malaccensi*, sed subtus olivascenti-flavus, ut in *A. rhodolamæ* coloratus, hypochondriis vix cinerascente adumbratis, fasciis pectoralibus latè flavis, gutture ut in *A. malaccensi* colorato, vix saturatiore, diversus.

♀ suprâ brunnescenti-cinerascens, vix olivaceo tincta, tectricibus minimis dorso concoloribus: scapularibus, dorso postico et supracaudalibus magis olivascensibus: remigibus et rectricibus saturatè brunneis, brunnescenti-flavo marginatis: capite laterali cinerascente: maculâ triangulari anteoculari, supercilio strigâque angustâ infraoculari albis: subtus pallidè flavicanti-fulva: gulâ albidâ: pectore laterali et hypochondriis vix cinerascente tinctis.

HAB. in insulis "Celebes" et "Sula" dictis.

Adult Male. Similar in plumage to *A. malaccensis*, excepting that the breast is olive-yellow, slightly paler on the abdomen and under tail-coverts, and of a more ashy shade on the flanks; the bright yellow pectoral tufts contrast very strongly with the olive colouring of the breast; the chin and throat are slightly darker and more rufous. Total length 4.7 inches, culmen 0.7, wing 2.65, tail 1.8, tarsus 0.65.

Adult Female. Upper parts, including the least series of wing-coverts, brownish ash, slightly tinted with olive, the olive shade being a little stronger on the scapulars, lower back, and upper tail-coverts; remainder of the wings and the tail dark brown, the feathers edged with brownish yellow; sides of the head ashy; a triangular patch in front of the eye, an eyebrow, and a narrow streak beneath the eye white; underparts pale yellowish buff; chin and throat white, sides of the chest and the flanks slightly tinted with ash. Total length 4.7 inches, culmen 0.7, wing 2.6, tail 1.65, tarsus 0.65.

Young Female. Differs from the adult in having the upper parts and sides of the head olive; those portions which in the adult are white are in this specimen pale yellow; breast yellow, slightly shaded on the sides of the chest and on the flanks with olive. Total length 4.2 inches, culmen 0.55, wing 2.6, tail 1.6, tarsus 0.65.

HAB. Celebes and Sula Islands.

THE present species, although closely allied to *A. malaccensis*, may be readily recognized by the strong olive shade of the breast, which causes the bright yellow pectoral tufts to stand out in



ANTHREPTES CHLORIGASTRA.
ANTHREPTES CELEBENSIS.

bold relief. By this character it more nearly approaches *A. chlorigastra*, but has the breast slightly darker than in that bird, and is decidedly smaller in size, as the measurements above given will show. The plumage, again, of the female is very different from either of these other species, if indeed we are correct in our supposed adult female of *A. chlorigastra*.

This species was first recorded from Celebes by Müller, and appears to be abundant throughout that island. It has also been collected in the Togian Islands, in the Gulf of Tomine, by Dr. Meyer—and in the Sula Islands by Mr. Wallace, who observes:—"This is the furthest eastward range of the species, which does not reach the Moluccas."

Count Salvadori has recorded it from Kandari (*Beccari*) and from Menado (*Bruijn*), and was the first to suggest the probability that the birds from Celebes, Sula, Sanghir, and the Philippines would prove to be distinct from *A. malaccensis*.

Dr. Meyer has kindly submitted to me for examination three males and four females collected by himself at Macassar and Batubassi in the south, and at Menado, Limboth, and the Togian Islands in the north. I have also seen other females of his collecting, and a young male from Celebes in the Marquis of Tweeddale's collection; and the characters as above mentioned I find to be perfectly constant in all the birds examined.

The specimens here figured and described are an adult male from Macassar, in the Dresden Museum, and a female from the Togian Islands in the Marquis of Tweeddale's collection.

ARACHNOTHERA AFFINIS.

(JAVAN GREY-BREASTED SPIDER-HUNTER.)

Cinnyris affinis, Horsf. Trans. Linn. Soc. xiii, p. 166 (1820); Vig. Mem. Raffles, p. 672 (1830).

Nectarinia inornata, Temm. Pl. Col. 84, fig. 2 (1823).

Cinnyris inornatus, Less. Man. d'Orn. ii, p. 33 (1828).

Arachnothera inornata, Less. Traité d'Orn. p. 292 (1831); Blyth, J. A. S. B. xv, p. 43 (1846); S. Müll. & Schl. Verh. Nat. Gesch. Aves, p. 68, no. 3 (1846); Blyth, Cat. B. Mus. A. S. B. pp. 222, 327 (1849); Bp. Consp. Av. i, p. 409 (1850); Reichb. Handb. Scansoriæ, p. 316, no. 745, pl. 593, figs. 4021-22 (1854); Schl. Handl. Dierk. p. 237 (1857).

Arachnothera affinis, Gray, Gen. B. i, p. 99, no. 2 (1847); Blyth, Cat. B. Mus. A. S. B. pp. 222, 327 (1849); Cab. Mus. Hein. i, p. 106, no. 573 (1850); Reichb. Handb. Scansoriæ, p. 315, no. 744, pl. 594, figs. 4026-27 (1854); Horsf. & Moore, Cat. B. E.I. Co. Mus. ii, p. 729, no. 1062 (1856); Gray, Hand-l. B. i, p. 111, no. 1375 (1869).

? *Arachnothera liturata*, Licht. Nomencl. Av. p. 55 (1854).

Similis *A. modestæ* sed major, suprâ magis aurato lavatus, subtùs magis distinctè striatus: mandibulâ saturatè brunneâ distinguendus.

Hab. in insulis "Java" et "Sumatra" dictis.

Adult Male. Upper parts olive-shaded yellow with dusky black centres to the feathers of the forehead and crown; wings the same colour as the back, with the inner webs of the quills dark brown; tail olive-shaded yellow, with a broad terminal band and the inner webs of all but the two centre feathers dark brown, and with a clear white subterminal spot on the inner webs of the four outer feathers on each side; sides of the head olive-yellow, shading into ashy grey in front of the eyes and on the lower portion of the cheeks and ear-coverts; underparts pale brownish ash slightly tinted with olive; the feathers on the throat with wide dark central streaks, and some of the chest-feathers with similar marks, but more olive and less clearly defined; under tail-coverts dusky olive broadly edged with pale buff; under surface of the wings dark brown, with the inner margins to the quills and the coverts white, the latter towards the edge of the wing shade into sulphur-yellow and having brownish black centres; upper mandible black, lower one dark brown; irides and legs brown. Total length 7.4 inches, culmen 1.3, wing 3.5, tail 2.4, tarsus 0.8.

Adult Female. Similar in plumage to the adult male. Total length 6.8 inches, culmen 1.3, wing 3.15, tail 2.1, tarsus 0.75.

HAB. Java and Sumatra.

THE present species, as I have already observed in my article upon *A. modesta*, is very similar in plumage to that bird; but it is of larger size, has the upper parts of a more golden shade, and

the shaft-stripes on the feathers of the throat and front of the chest darker and more sharply defined.

It is a common species in Java, where, according to Dr. Horsfield, it is known to the natives as "Chess." Mr. Wallace also collected many specimens there, two of which I have described above as adult male and female, their sexes, in my opinion, being indicated by their size. The male is in the Marquis of Tweeddale's collection, and is represented by the lower figure in my Illustration; the female is in my own collection.

From Sumatra it has been recorded by Müller and Schlegel; but I presume it is rare there; for it does not occur in the large collection made by Mr. E. C. Buxton in the neighbourhood of Lampong, nor have I been able to examine a specimen from that island.

ARACHNORAPHIS CRASSIROSTRIS.

(LESSER STOUT-BILLED SPIDER-HUNTER.)

Arachnocestra crassirostris, Reichb. Handb. Scansoriæ, p. 314, no. 747, pl. 592, fig. 4016 (1854).*Arachnothera temmincki*, Horsf. & Moore, Cat. B. E.I. Co. Mus. ii, p. 728, no. 1060 (1856);

Gray, Hand-l. B. i, p. 111, no. 1367 (1869); Tweeddale, Ibis, 1877, p. 301.

Arachnothera crassirostris, Gray, Hand-l. B. i, p. 111, no. 1368 (1869); Salvad. Ann. Mus.

Civic. Genova, v, p. 187 (1874).

♂ *ad.* suprâ sordidè olivascens, capitis plumis medialiter saturatè brunneis: tectricibus alarum minimis et medianis dorso concoloribus: majoribus et remigibus nigricanti-brunneis, lætè olivascenti-flavo marginatis: supracaudalibus lætiùs flavicantibus: rectricibus nigricanti-brunneis, angustè flavo marginatis, externis versùs apicem pogonii interni pallidè cinerascentibus vix flavicanti-albidis: plagâ anteculari fuscâ: supercilio indistincto et plumis infraocularibus lætiùs flavis: facie laterali fuscâ vix olivaceo lavatâ: gutture et præpectore cinerascenti-brunneis, flavo lavatis, gulâ lætiùs flavâ: corpore reliquo subtùs lætè flavo, hypochondriis vix olivaceo lavatis: fasciis pectoralibus lætè aurantiacis: subalaribus et axillaribus albidis paullò flavido lavatis: remigibus infrâ saturatè brunneis, intùs albido marginatis: maxillâ nigrâ, mandibulâ saturatè brunneâ, basaliter albicanti-cinereâ: pedibus saturatè plumbeis, plantis aurantiacis: iride saturatè brunneâ.

♀ mari similis sed fasciis pectoralibus aurantiacis nullis.

Hab. in peninsulâ Malayanâ et in insulis "Sumatra" et "Borneo" dictis.

Adult Male. Upper parts olive, with dark brown centres to the feathers of the crown; sides of the head olive, with a broad dark-brown band from the nostril through the eye, partially margined above and beneath with yellow; upper tail-coverts dark brown broadly edged with olive-yellow; wings and tail dark brown, the feathers edged with olive-yellow, of a brighter and yellower shade on the quills and greater series of wing-coverts; the tail-feathers have pale ends, broadest on the outer ones, and fading into pale yellow spots on the inner webs of some of them; underparts yellow shaded with ashy olive on the throat and front of the breast, and brightest and yellowest towards the under tail-coverts; on each side of the chest a tuft of bright orange-yellow feathers; under surface of the wings dark brown, with the coverts sulphur-yellow and the inner margins of the quills white; bill, upper mandible black, lower one dark brown with a whitish-blue shade at the base; legs, feet, and claws dark plumbeous, soles of the feet orange-yellow; irides dark brown. Total length 6.5 inches, culmen 1.35, wing 3, tail 1.9, tarsus 0.7.

Adult Female. Similar in plumage to the adult male, but without the bright yellow pectoral tufts.

Immature. Similar in plumage to the adult female, excepting that the underparts are slightly paler; the lower throat and front of the chest inclining to whitish ash. Total length about 5.5 inches, culmen 1.1, wing 2.6, tail 1.3 (the end much worn), tarsus 0.6.

HAB. Malay peninsula, Sumatra, and Borneo.

THIS form of Spider-hunter is the smallest species of the genus *Arachnoraphis*; the bill is smaller

in proportion than that of *A. flavigaster*. From that bird the present species is distinguished by its not possessing a circle of yellow feathers round the eye, and in not having any yellow on the ear-coverts. The quills and greater wing-coverts are broadly edged with yellow, which constitutes a well-marked character in the species.

Messrs. Hume and Davison write to me:—"This Spider-hunter does not occur, so far as we yet know, in Tenasserim; and even in the Malay peninsula it appears to be the rarest of all the Spider-hunters. The only place at which we met with it was at Karoo, about twenty-six miles east, or a little south-east, of Malacca, in the territory of the Rajah of Tampin. In the local governor's garden there was a large *Bombax* tree, which was in flower at the close of October, and which was infested by all the Honey-suckers, amongst which *Arachnothera modesta*, *A. chryso-genys*, *A. longirostra*, *Anthreptes malaccensis*, and several species of *Dicaeum* were most numerous; and it was on this tree that our specimens were obtained; but so rare was it that we had no opportunity of observing its habits.

"There does not appear to be so much difference in the size of the sexes as there is in most of the other species; but, unfortunately, we measured no females in the flesh.

"Two males measured—length 6.5, 6.55 inches, expanse 9.4, 9.62, tail from vent 1.9, 2.05, wings 3, tarsi 0.65, bill from gape 1.3, 1.25; weight 0.62, 0.55 ounce.

"The legs and feet dark plumbeous, soles orange-yellow; upper mandible black, lower mandible dark brown, bluish white at base; irides dark brown.

"These were the colours, be it remembered, on the 28th October; and the colours of the soft parts may possibly change later on in the cold season. One male had the deep-orange pectoral tufts well developed; the other male only showed a faint trace of these tufts on one side; and the female showed no trace of them at all."

In the British Museum there is a specimen from Sumatra, collected there by Mr. Wallace; and Mr. E. C. Buxton also met with it on that island, in the Lampong district.

Count Salvadori first mentions its occurrence in Borneo, where Dr. Beccari procured two specimens in the neighbourhood of Sarawak. These specimens were unfortunately lost; so that it was a great satisfaction to me to procure an adult male collected by Mr. Henry Everett in the same part of that island. This specimen agrees in every respect with the specimens of that sex above described and figured.

I have examined the types of *Arachnocestra crassirostris*, Reichb., and of *Arachnothera temmincki*, Horsf. & Moore, and have no hesitation in referring them to the same species. The former I have described as the immature bird; for, from the general appearance of that specimen, as well as from the upper mandible being slightly paler at the base, it would appear not to be fully adult. It has probably faded slightly; for according to Reichenbach's original description the throat and breast were yellowish grey. It has been mounted; and therefore the total length can only be measured approximately; and the tail, which was apparently never quite fully grown, is much worn.

The type of *Arachnothera temmincki* agrees perfectly with the adult male above described and figured, and which was collected by Mr. Davison at Karoo, near Malacca.

The female here described and figured is in the Marquis of Tweeddale's collection, and is also from the neighbourhood of Malacca. For the loan of the type of *A. crassirostris*, preserved in the Dresden Museum, I am indebted to Dr. A. B. Meyer.